ORDER NO. GAD8606584C4

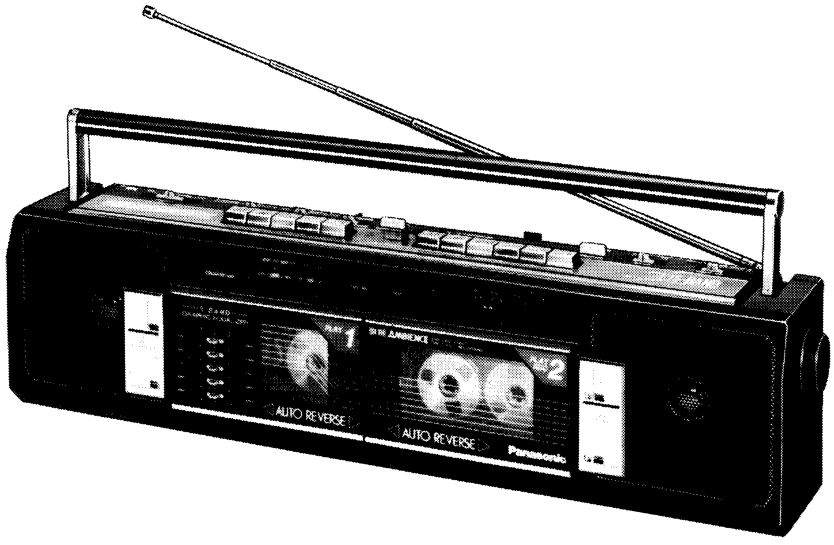
Service Manual

Radio Cassette

Stereo Radio Cassette Recorder

RX-FW32

(Black)



This is the Service Manual for the following areas.

ME ··· For AAFES EUROPE.

MF ··· For AAFES PACIFIC.

RX-FW32 MECHANISM SERIES

■ SPECIFICATIONS

General:

Power Requirement:	AC; 110~127/200~220/230~250V, 50/60Hz Battery; 9V Six "D" Size Flashlight Batteries) (Panasonic UM-1 or equivalent) Car Battery; with optional car adaptor RP-917H
Power Consumption:	10W (AC only)
Power Output:	7W (3.5W×2)...RMS (max.)
Speaker:	Woofer; 4" (10cm) PM Dynamic Speaker (2.7Ω) Tweeter; 3/4" (2cm) Ceramic Speaker (1kΩ)
Input:	MIX. MIC; sensitivity 5mV/applicable microphone impedance 200~600Ω, φ3.5 Recom. Mic WM-2298 DC IN; 9V Line in; sensitivity 250mV/47kΩ over
Output:	Headphones; 32Ω, φ3.5
Dimensions:	20 1/8"(W)×5 1/2"(H)×5"(D) (513×140×127)mm
Weight:	6lbs. 9.8oz. (3.0kg) without batteries

Timer/Clock Section:

Power Requirement:	Battery; 1.5V (One "AA" size Flashlight Battery) (Panasonic UM-3 or equivalent)
Accuracy:	±20 seconds (+77°F)

Radio Section:

Radio Frequency Range:	FM; 88~108MHz AM; 525~1610kHz
Intermediate Frequency:	FM; 10.7MHz AM; 455kHz
Sensitivity:	FM; 2.5μV/50mW output AM; 56μV/m/50mW output

Tape Deck Section:	TAPE 1
Frequency Response:	60~13,000Hz (with normal tape)
Tape Speed:	1 7/8ips (4.8cm/s)
Track System:	4-track 2-channel stereo playback

Tape Deck Section:	TAPE 2
Frequency Response:	60~13,000Hz (with normal tape)
Recording System:	AC bias, Magnet erase
Tape Speed:	1 7/8ips (4.8cm/s)
Track System:	4-track 2-channel stereo recording and playback

Weights and dimensions shown are approximate.
Design and specifications are subject to change without notice.

Panasonic

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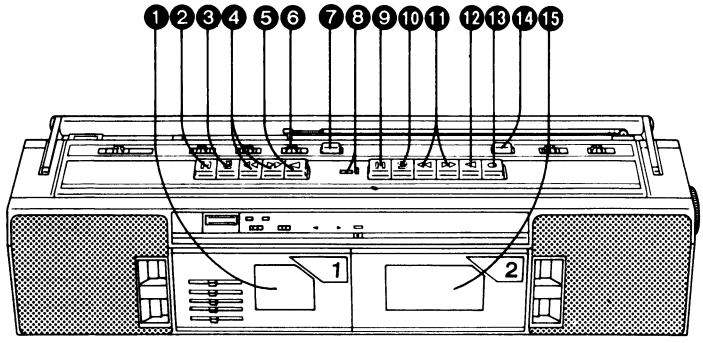
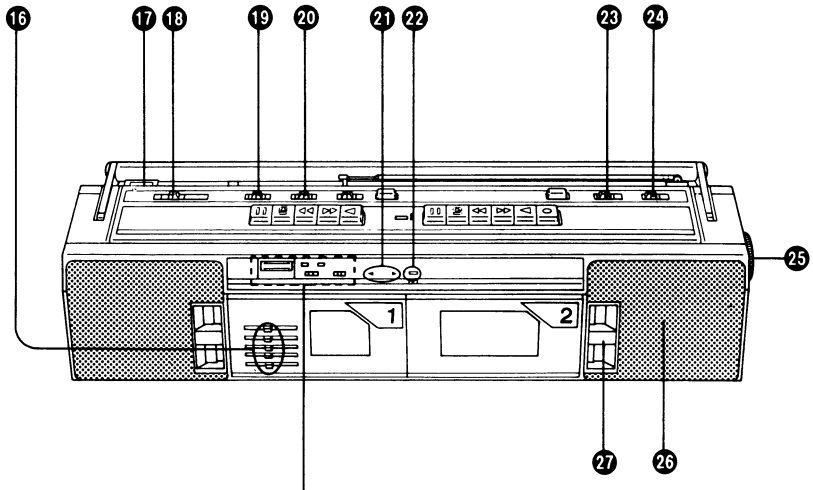
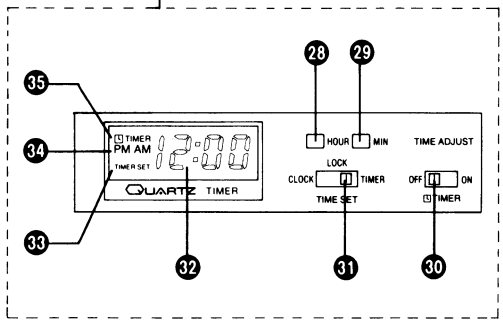
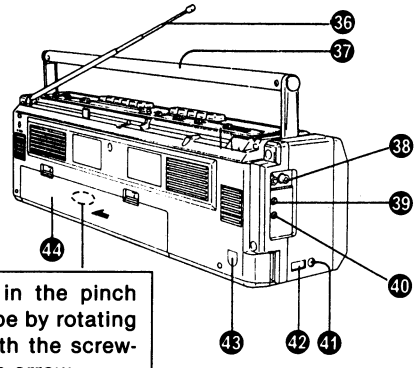
LOCATION OF CONTROLS AND COMPONENTS







Note:
When not in using the Timer function, be sure to set the Timer Switch [30] to "OFF". The usuall operation can not be done in "ON" position.



When the tape is caught in the pinch roller, etc. Release the tape by rotating the pulley on the motor with the screw-driver in the direction of the arrow.

TAPE 1 CONTROLS

1. Cassette Compartment
2. Pause Button (❚❚ PAUSE)
3. Stop/Eject Button (⏏ STOP/EJECT)
4. Fast/Cue Buttons (◀◀ • ▶▶ FAST/CUE)
5. Playback Button (◀ PLAY)
6. Tape 1 Reverse Mode Selector (TAPE 1 REVERSE MODE)
7. Direction Button (DIRECTION)

TAPE 2 CONTROLS

8. Tape 2 Counter and Reset Button (TAPE 2 COUNTER)
9. Pause Button (❚❚ PAUSE)
10. Stop/Eject Button (⏏ STOP/EJECT)
11. Fast/Cue Buttons (◀◀ • ▶▶ FAST/CUE)
12. Playback Button (◀ PLAY)
13. Record Button (● RECORD)
14. Direction Button (DIRECTION)
15. Cassette Compartment

GENERAL CONTROLS

16. Graphic Equalizer Controls (5-BAND GRAPHIC EQUALIZER)
17. Built-in Microphone (MIC)
18. Volume Control (VOLUME)
19. Function Selector (SELECTOR)
20. Editing Mode Selector (EDITING MODE)
21. Direction/Power/Battery Check Indicators (FWD REV/POWER/BATT)
22. FM Stereo Indicator (FM ST)
23. Band Selector (BAND)
24. Mode Selector/Beat Proof Switch (MODE/B.P)
25. Tuning Control (TUNING)
26. Speakers (Woofers) 4" (10cm), (2.7Ω)
27. Speakers (Tweeters) 3/4" (2cm), (1kΩ)

CLOCK/TIMER CONTROLS

28. Hour Set Button (HOUR)
29. Minute Set Button (MIN)
30. Timer Switch (◷ TIMER)
31. Time Set Selector (TIME SET)
32. Clock/Timer Display
33. Timer Set Indicator (TIMER SET)
34. PM–AM Indicators (PM–AM)
35. Timer Indicator (◷ TIMER)

OTHER CONTROLS

36. Telescopic Antenna
37. Handle
38. Line Input Jacks (LINE IN) 250mV/47kΩ
39. Mixing Microphone Jack (MIXING MIC) 5mV/200~600Ω
40. Headphones Jack (PHONES) 32Ω, φ3.5
    When using the headphones, avoid listening to sound for a long period of time and avoid excessive volume levels, which may injure your ears.
41. DC Input Jack (DC IN 9 V ⊖-◉-⊕)
42. AC Socket (AC IN ~)
43. Voltage Selector (VOLTAGE SELECTOR)
44. Battery Compartment

D

DISASSEMBLY INSTRUCTIONS

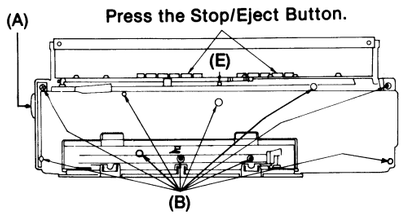


Fig. 1

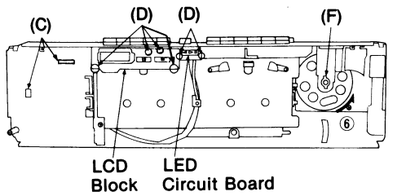


Fig. 2

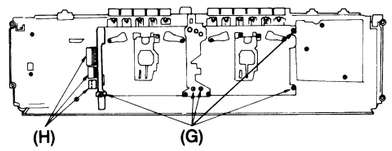


Fig. 3

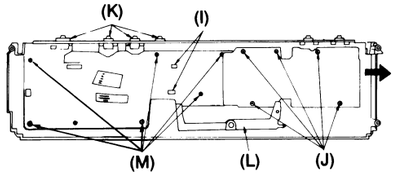


Fig. 4

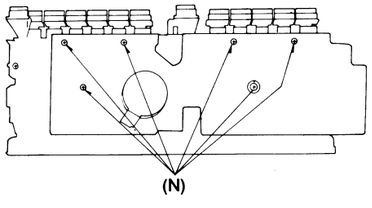


Fig. 5

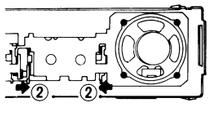


Fig. 6

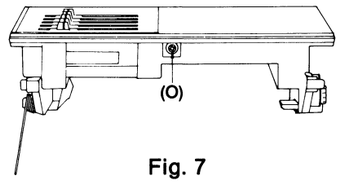


Fig. 7

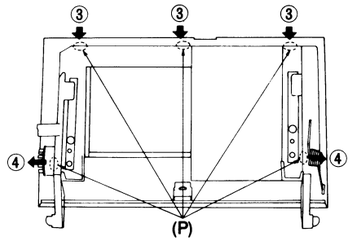


Fig. 8

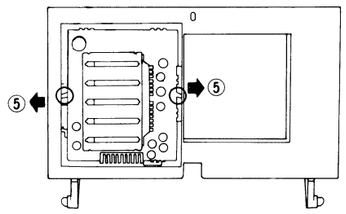


Fig. 9

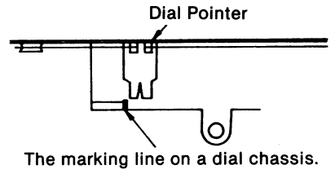


Fig. 10

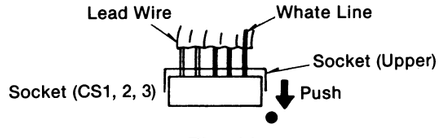


Fig. 11

Ref. No.	Shown in Fig. —.	To remove —.	Remove —.
1	1	Front Cabinet (※1)	Knob ..... (A)×1
2	1		Screw (3×50) mm ..... (B)×9
3	1		Press the Stop/Eject button.
4	2		Socket (CP4, CP7) ..... (C)×2
5	2	LCD Block/LED Circuit Board	Rib ..... (D)×6
6	1	Dial Chassis (※2)	Screw (2×8) mm ..... (E)×1
7	2		Screw (2.6×5) mm ..... (F)×1
8	3	Mechanism (Tape 1, 2) (※3)	Screw (3×10) mm ..... (G)×5
9	3		Socket (CS1, CS2, CS3) ..... (H)×3
10	4		Socket (CP1, CP2) ..... (I)×2
11	4	Tuner Circuit Board	Screw (3×10) mm ..... (J)×5
12	4	Main Circuit Board (※4)	Switch Lever ..... (K)×4
13	4		REC/PLAY Lever ..... (L)×1
14	4		Screw (3×10) mm ..... (M)×6
15	5	Mechanism Circuit Board	Screw (2.6×5) mm ..... (N)×6
16	6	Cassette Holder	Push the boss in the direction of arrows ② to remove it.
17	7	Graphic Equalizer Circuit Board (Tape 1) (※5)	Screw (2.6×8) mm ..... (O)×1
18	8		Remove the lugs in the direction of arrow ③ and ④ and remove the cassette panel. ..... (P)×5
19	9		Push the lug on the cassette holder in the direction of arrow ⑤ and remove the circuit board

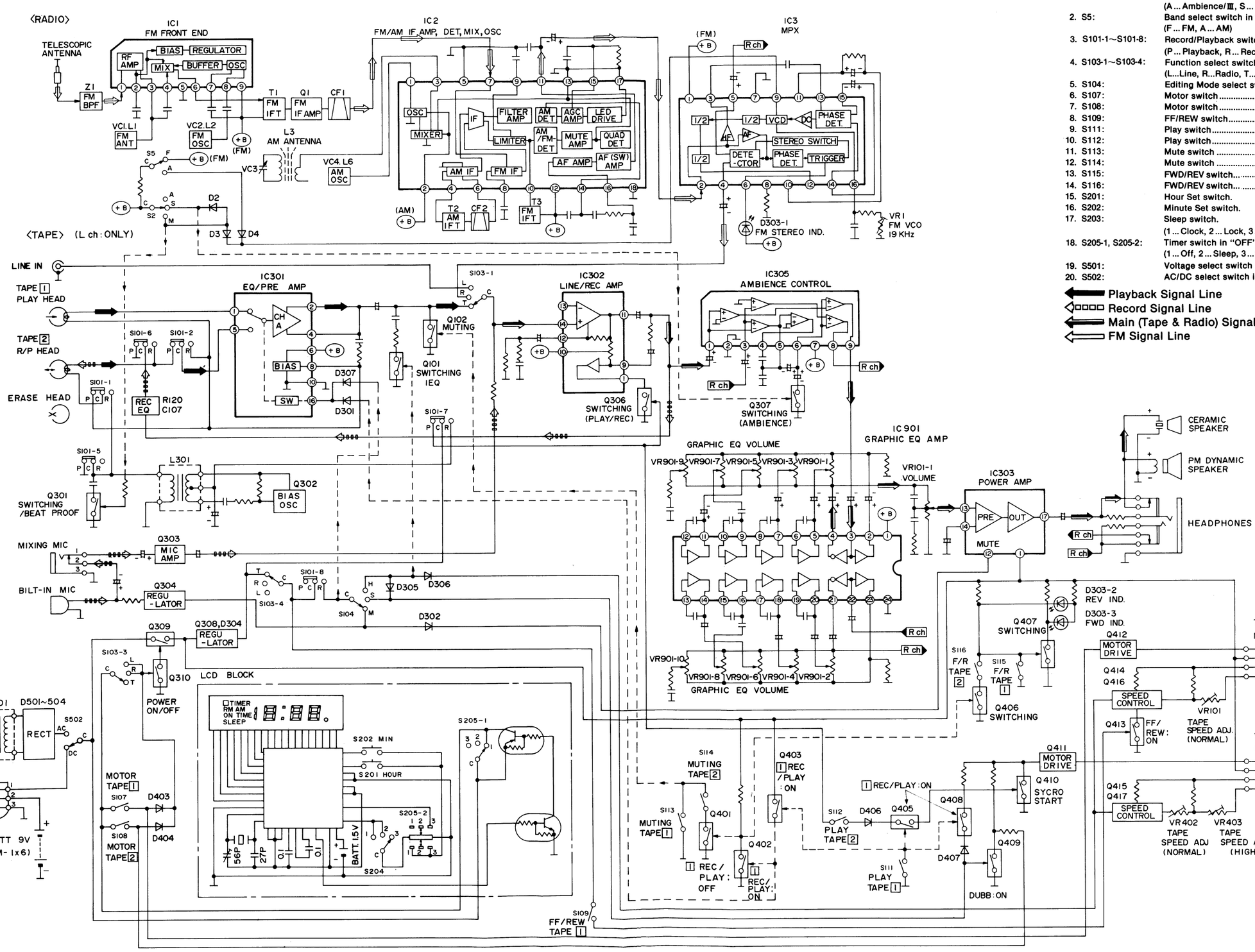
(※1) The handle is attached between the front cabinet and the dial chassis, so the handle can be easily removed by first removing the front cabinet.
(※2) Before removing the dial chassis, ture the tuning drum all the way in the direction of arrow ⑥ (F min.). (See Fig. 2)
(※3) When disconnecting or connecting the flat cables between the main circuit board and the mechanism circuit board connectors (CS1, CS2, and CS3), do not hold the mechanism circuit board as this may cause damage to the circuit board.
(※4) Before removing the main circuit board, gently slide it in the direction of the arrow so as not to deform the Built-in microphone and the Line jack. (See Fig. 4)
(※5) The lugs on the cassette panel are extremely rigid, so be careful not to break them.
(※6) When remounting the mechanism and the mechanism circuit board, be careful that the lead wires from the leaf switch do not catch on the pulley or the REC/PLAY lever.

- **Precaution for Mounting the Dial Chassis**

  Setting the Dial (See Fig. 10)
  1. Set the dial pointer to the position shown in the figure.
  2. Turn the variable capacitor all the way counterclockwise (F min.).
  3. After attaching the Dial Chassis, secure the Dial Drum in place with screws.
     (Pay careful attention to the switch levers and buttons when attaching the Dial Chassis.)

- **Precautions for Connecting and Disconnecting the CS1, CS2, and CS3 (Socket) Lead Wires (See Fig. 11)**
  - Hold the bottom of the socket with one hand, and push down on the top of the socket with the other to disconnect the lead wires.
  - To attach the socket, hold the bottom of the socket with one hand, and push down on the top of the socket with the other to insert the lead wires.
    (There is no support on the bottom of the P.C.Board, so do not push down too hard as this may damage the P.C.Board.)
    (After connecting the scoket, check to be sure that the lead wires are securely connected to the socket.)
    (Also be sure that the lead wires are connected in the right direction.)

BLOCK DIAGRAM



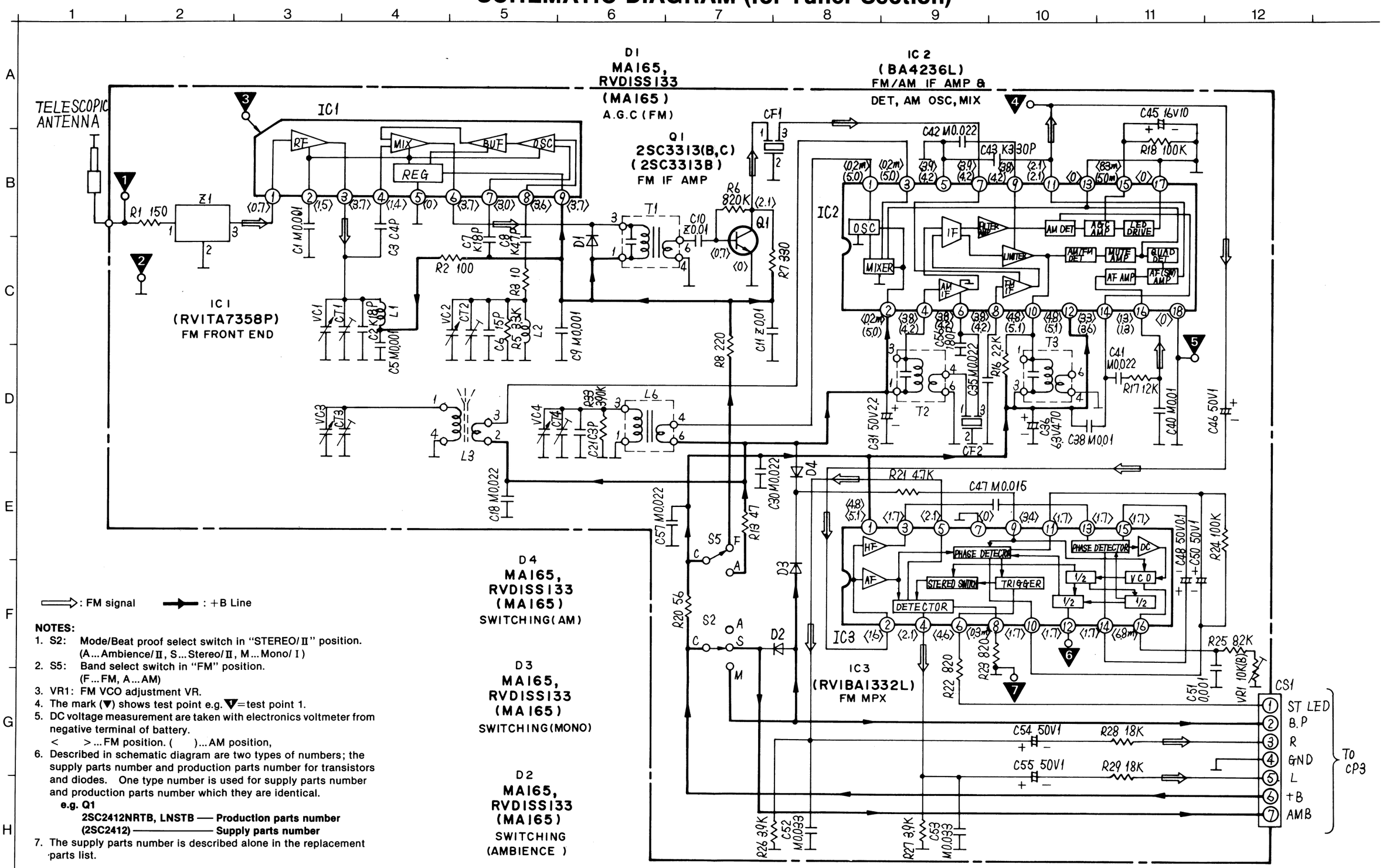
NOTES:

1. S2: Mode/Beat Proof select switch in "STEREO/Ⅱ" position. (A ... Ambience/Ⅲ, S ... Stereo/Ⅱ, M ... Mono/Ⅰ)
2. S5: Band select switch in "FM" position. (F ... FM, A ... AM)
3. S101-1~S101-8: Record/Playback switch in "PLAYBACK" position. (P ... Playback, R ... Record)
4. S103-1~S103-4: Function select switch in "Power OFF/Tape" position. (L ... Line, R ... Radio, T ... Power OFF/Tape)
5. S104: Editing Mode select switch in "BUILT-IN MIC" position.
6. S107: Motor switch ..... (TAPE 1)
7. S108: Motor switch ..... (TAPE 2)
8. S109: FF/REW switch ..... (TAPE 1)
9. S111: Play switch ..... (TAPE 1)
10. S112: Play switch ..... (TAPE 2)
11. S113: Mute switch ..... (TAPE 1)
12. S114: Mute switch ..... (TAPE 2)
13. S115: FWD/REV switch ..... (TAPE 1)
14. S116: FWD/REV switch ..... (TAPE 2)
15. S201: Hour Set switch.
16. S202: Minute Set switch.
17. S203: Sleep switch. (1 ... Clock, 2 ... Lock, 3 ... Timer)
18. S205-1, S205-2: Timer switch in "OFF" position. (1 ... Off, 2 ... Sleep, 3 ... Sleep/Timer)
19. S501: Voltage select switch
20. S502: AC/DC select switch in "DC" position.

Playback Signal Line
Record Signal Line
Main (Tape & Radio) Signal Line
FM Signal Line

▼ Be sure to fold at the (▼) mark so that mark is on the outside.

SCHEMATIC DIAGRAM (for Tuner Section)



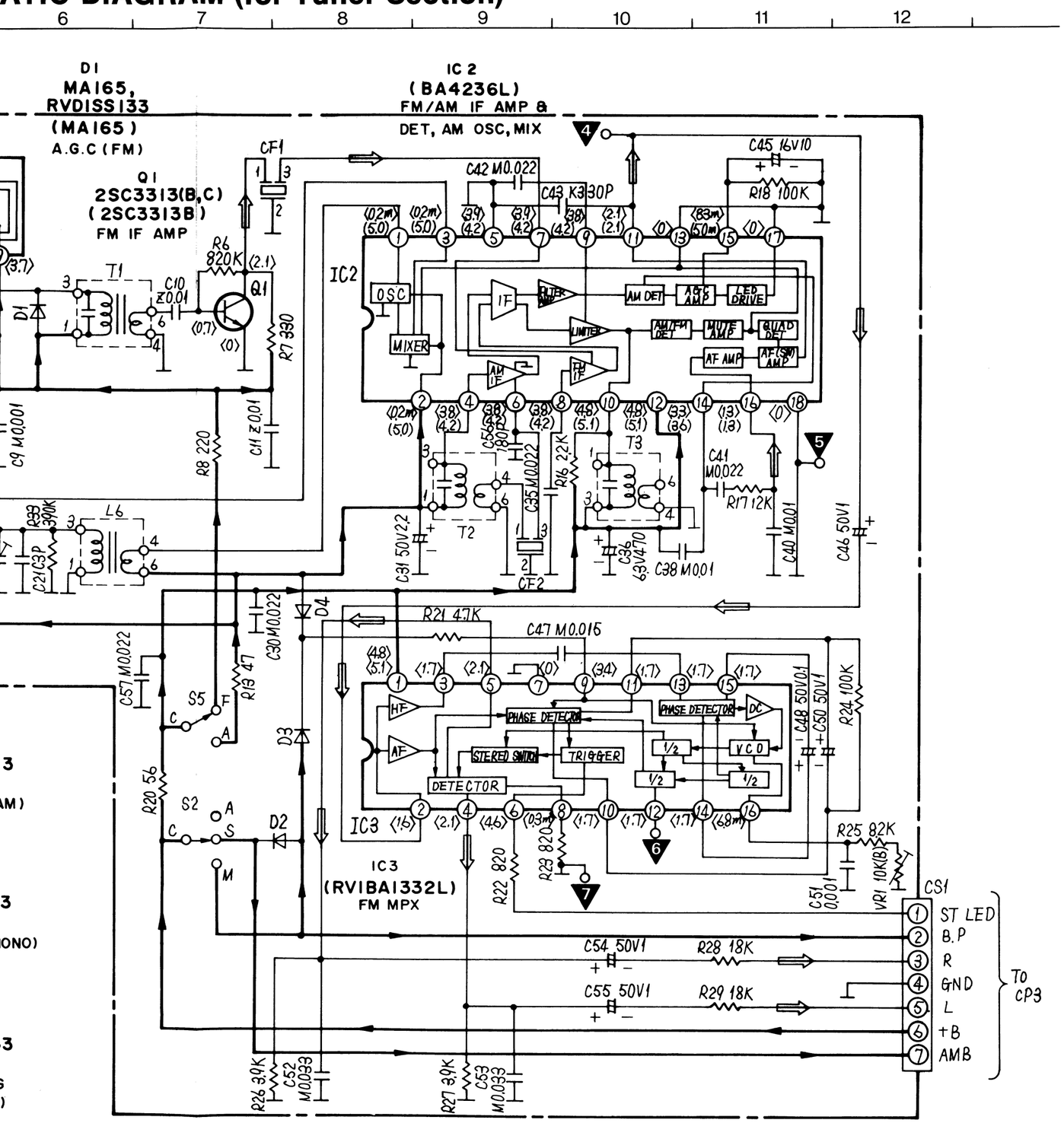
: FM signal : +B Line

NOTES:

1. S2: Mode/Beat proof select switch in "STEREO/Ⅱ" position. (A...Ambience/Ⅱ, S...Stereo/Ⅱ, M...Mono/Ⅰ)
2. S5: Band select switch in "FM" position. (F...FM, A...AM)
3. VR1: FM VCO adjustment VR.
4. The mark (▼) shows test point e.g. ▼1=test point 1.
5. DC voltage measurement are taken with electronics voltmeter from negative terminal of battery.
   < >...FM position. ( )...AM position,
6. Described in schematic diagram are two types of numbers; the supply parts number and production parts number for transistors and diodes. One type number is used for supply parts number and production parts number which they are identical.
   e.g. Q1
   2SC2412NRTB, LNSTB — Production parts number
   (2SC2412) ——— Supply parts number
7. The supply parts number is described alone in the replacement parts list.

• This schematic diagram may be modified at any time with the development of new technology.

ATIC DIAGRAM (for Tuner Section)



CAPACITORS AND RESISTORS

Numbering System of Resistor

Example:

ERD	25	F	J	101
Type	Wattage	Shape	Tolerance	Value (100Ω)
ERJ	6G	C	J	2R2
Type	Wattage	Shape	Tolerance	Value (2.2Ω)

Numbering System of Capacitor

Example:

ECKD	1H	102	Z	F
Type	Voltage	Value (1000pF)	Tolerance	Peculiarity
ECEA	50	M	R47	
Type	Voltage	Peculiarity	Value (0.47μF)	

Resistor Type		Wattage	Tolerance
ERD:	Carbon Resistor	10 : 1/8W	F : ±1%
ERC:	Solid Resistor	25 : 1/4W	G : ±2%
ERF:	Incombustible Box-Shaped Wire-Wound Resistor	50 : 1/2W	J : ±5%
		18 : 1/8W	K : ±10%
		14 : 1/4W	H : ±20%
		12 : 1/2W	
ERG:	Metal Oxide-Film Resistor	1 : 1W	
		2 : 2W	
ERM:	Wire-Wound Resistor	3 : 3W	
		S1 : 1/2W	
ERO:	Superstable Metal Film Resistor	S2 : 1/4W	
		6G : 1/10W	
		8G : 1/8W	
ERX:	Metal-Film Resistor		
RRJ: ERJ:	Chip Resistor		

Capacitor Type		Voltage				Tolerance
ECCD:	Ceramic Capacitor (Chitacon)	(ECCD, ECKD Type)				K : ±10%
		1H : 500V DC		2H : 500V DC		M : ±20%
ECKD:	Ceramic Capacitor (Chitabari)	(ECFD Type)				Z : +80% −20%
		C : 12V DC		D : 25V DC		
ECFD:	Semiconductor Ceramic Capacitor	E : 50V DC				J : ±5%
		(ECQ Type)				G : ±2%
ECE□:	Electrolytic Capacitor	05 : 50WV DC		1 : 100WV DC		F : ±1%
ECS□:	Tantalum Fixed Electrolytic Capacitor	(ECE, ECS Type)				C : ±0.25pF
		0G : 4V		0J : 6.3V		D : ±0.5pF
ECQ□:	Polystyrenc Film Capacitor	1A : 10V		1C : 16V		F : ±1pF
		1E : 25V		1V : 35V		
ECQS:	Polystyrene Film Capacitor	1H : 50V		1J : 63V		
		2A : 100V				
ECQS:	Polypropylene Film Capacitor					
ECQV:	T.F Capacitor					
ECU□: RCU□:	Chip Capacitor					
ECBT:	Cylindrical Ceramic Capacitor					

※ Capacity are in microtarads (μF) unless specified otherwise, P=Pico-farads.
※ Resistance are in ohms (Ω), unless specified otherwise, 1K=1,000Ω, 1M=1,000KΩ

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.
CAPACITORS				**RESISTORS**	
C 1, 5, 9	ECKD1H102MD	C 126, 226, 309	ECEA1HUOR1	R 1	ERDS2TJ151
C 2, 7	ECCD1H180KC	C 215	ECFT1C272MD	R 2	ERDS2TJ101
C 3	ECCD1H040C	C 302, 320, 329	ECEA0JU471	R 3	ERDS2TJ100
C 6	ECCD1H150KU	C 303	ECEA0JU330	R 5	ERDS2TJ332
C 8	ECCD1H470KC	C 304	ECCD1H181K	R 6	ERDS2TJ824
C 10, 11	ECKD1H103ZF	C 306	ECQP2A272JZ	R 7	ERDS2TJ331
C 18, 30, 35, 41, 42, 57	ECFT1C223MD	C 307, 405, 406	ECEA0JU221	R 8	ERDS2TJ221
		C 308	ECFT1C223MD	R 13	ERDS2TJ470
C 21	ECCD1H030C	C 311, 327	ECEA1HUR47	R 16	ERDS2TJ222
C 31	ECEA1HU2R2	C 319	ECEA1EU4R7	R 17	ERDS2TJ123
C 36	ECEA0JU471	C 325	ECFT1C103MD		
		C 326	ECFT1C153MD	R 18, 24	ERDS2TJ104
C 38, 40	ECFT1C103MD	C 330	ECEA1CU221	R 20	ERDS2TJ560
C 43	ECCD1H331K	C 332	ECEA1CU222	R 21	ERDS2TJ472
C 45	ECEA1CU100	C 345	ECCD1H101K	R 22, 23	ERDS2TJ821
C 46, 50, 54, 55	ECEA1HU010	C 346	ECEA1CU102	R 25	ERDS2TJ822
C 47	ECFT1C153MD	C 401, 403	ECEA1CU100	R 26, 27	ERDS2TJ392
C 48	ECEA1HU0R1	C 402, 404	ECEA1CU221	R 28, 29	ERDS2TJ183
C 51	ECQP2A102JZ	C 501, 502, 503, 504	ECKT1H103ZF	R 33	ERDS2TJ394
C 52, 53	ECFT1C333MD			R 102, 116, 202, 216, 319	ERDS2TJ332
C 56	ECCD1H181K	C 901, 909, 911, 912, 914, 922, 924, 925	ECEA1HKS010	R 106, 206	ERDS2TJ272
C 101, 102, 201, 202	ECKD1H471KB			R 111, 211	ERDS2TJ151
		C 902, 915	ECUX1H223MD	R 112, 212, 351	ERDS2TJ331
C 103, 110, 119, 203, 210, 219, 341	ECEA0JU470	C 903, 916	ECEA1HKSR33L	R 115, 215	ERDS2TJ562
		C 904, 917	ECUX1H682MD	R 118, 218	ERDS2TJ100
		C 905, 918	ECEA1HKS0R1	R 119, 219, 320	ERDS2TJ101
C 104, 204	ECFT1C333KD	C 906, 919	ECUX1H222MD	R 120, 220	ERDS2TJ153
C 105, 123, 124, 205, 223, 224, 314	ECEA1HU010	C 907, 920	ECUX1E333MD	R 121, 221	ERDS2TJ124
		C 908, 921	ECUX1E683MD	R 123, 223	ERDS2TJ560
		C 910, 923	RCUX1E103MD	R 301	ERDS2TJ221
		C 913	ECEA0JKS101	R 306	ERDS2TJ6R8
C 106, 206, 305, 333, 334, 343	ECKD1H103MD			R 307, 328	ERDS2TJ561
C 107, 117, 207, 217, 313, 340	ECKD1H102MD			R 310	ERDS2TJ680
C 108, 208	ECKD1H332MD			R 321	ERDS2TJ335
C 109, 120, 209, 220	ECFT1C473MD			R 327	ERDS2TJ471
C 111	ECKD1H472MD			R 344	ERDS2TJ393
C 112, 212, 301, 316, 318, 321, 328, 331, 344	ECEA1CU100			R 401, 417	ERDS2TJ472
				R 402	ERDS2TJ391
				R 403, 404	ERDS2TJ151
C 113, 213	ECEA1HUR22			R 405, 407, 408, 414, 418	ERDS2TJ102
C 115	RCBS1C272MX			R 406	ERDS2TJ152
C 116, 122, 216, 222	ECFT1C683MD			R 409, 410, 412, 415, 420	ERDS2TJ103
C 118, 218, 312	ECEA0JU101			R 411, 416	ERDS2TJ105
C 121, 221, 335	ECEA1AU471			R 413, 419	ERDS2TJ123

RX-FW32 RX-FW32

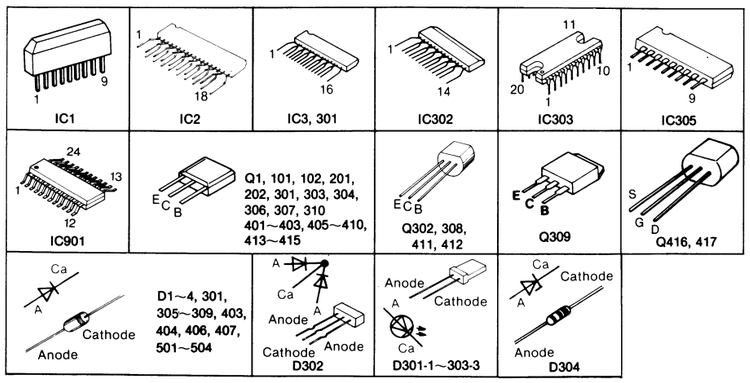
ELECTRICAL PARTS LIST

REPLACEMENT PARTS LIST

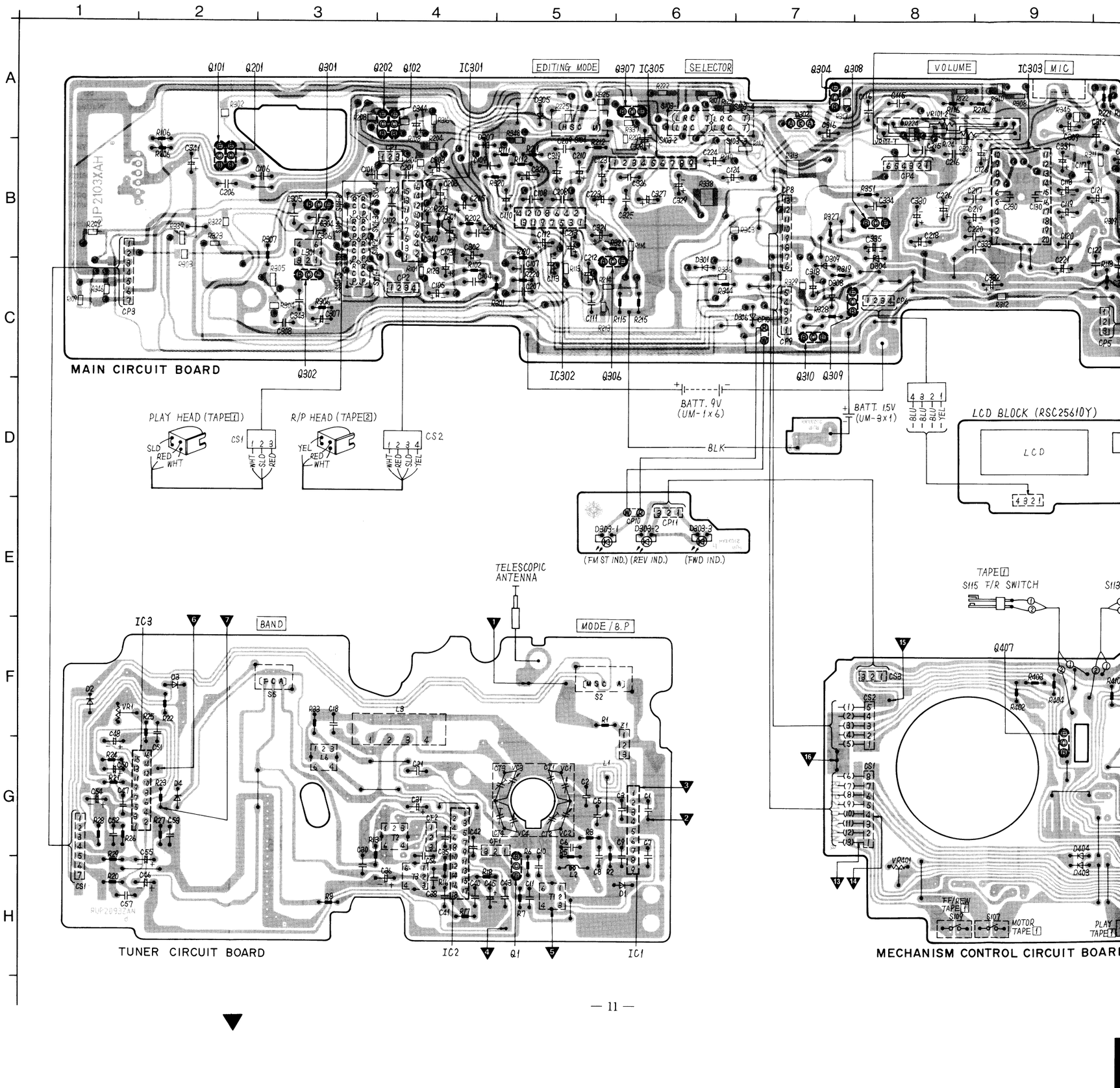
Important safety notice
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Ref. No.	Part No.	Part Name & Description
INTEGRATED CIRCUITS		
IC 1	**RViTA7358P**	IC (FM FRONT END)
IC 2	**BA4236L**	IC (FM/AM IF AMP & DET, AM OSC, MIX)
IC 3	**RViBA1332L**	IC (FM MPX)
IC 301	**BA3402M**	IC (EQ/PRE AMP)
IC 302	**M51160AL**	IC (LINE/REC AMP)
IC 303	**LA4108R**	IC (POWER AMP)
IC 305	**RViBA6433**	IC (AMBIENCE CONTROL)
IC 901	**AN7332S**	IC (GRAPHIC EQ AMP)
TRANSISTORS		
Q 1	**2SC3313B**	Transistor (FM IF AMP)
Q 101, 201, 301, 304, 306, 307, 310	**2SC1740SR**	Transistor (MUTING, SWITCHING, etc.)
Q 102, 202	**2SC1740SS**	Transistor (EQUALIZER)
Q 302, 308	**2SD1302R**	Transistor (BIAS OSC REGULATOR)
Q 303	**2SC1740SLNR**	Transistor (MIC AMP)
Q 309	**2SB930P**	Transistor (REGULATOR)
Q 401, 402, 409, 410, 413, 415	**RVTDTC114YST**	Transistor (MOTOR DRIVE)
Q 403, 405, 408	**RVTDTA114YST**	Transistor (MOTOR DRIVE)
Q 406, 407	**RVTDTC143TST**	Transistor (MOTOR DRIVE)
Q 411, 412	**2SD1302R**	Transistor (MOTOR DRIVE)
Q 414	**2SC1740SR**	Transistor (TAPE SPEED)
Q 416, 417	**2SK381CD**	Transistor (TAPE SPEED)
DIODES & RECTIFIERS		
D 1, 2, 3, 4	**MA165**	Diode (AGC, SWITCHING)
D 301, 305, 306, 307, 308, 309	**MA165**	Diode (SWITING)
D 302	**RVDDAN209S**	Diode (PROTECTOR)
D 303-1, 303-2, 303-3	**LN032308P**	LED (DIRECTION IND.)
D 304	**MA4068M**	Diode (REGULATOR)
D 403, 404, 406, 407	**MA165**	Diode (SWITCHING)
D 501, 502, 503, 504	**RVD1SR35**	Diode (RECT.)
COILS		
L 2	**RLD4Y53**	Coil, FM OSC
L 3	**RLF2C62**	Coil, AM ANT
L 6	**RL02B105**	Coil, AM OSC
L 301	**RL09B17**	BIAS OSC
TRANSFORMERS		
T 1, 3	**RLi4B153**	IFT (FM 1st/2nd)
T 2	**RLi2B458**	IFT (AM)
T 501	**RLT5K3X6A**	Power Transformer ⚠

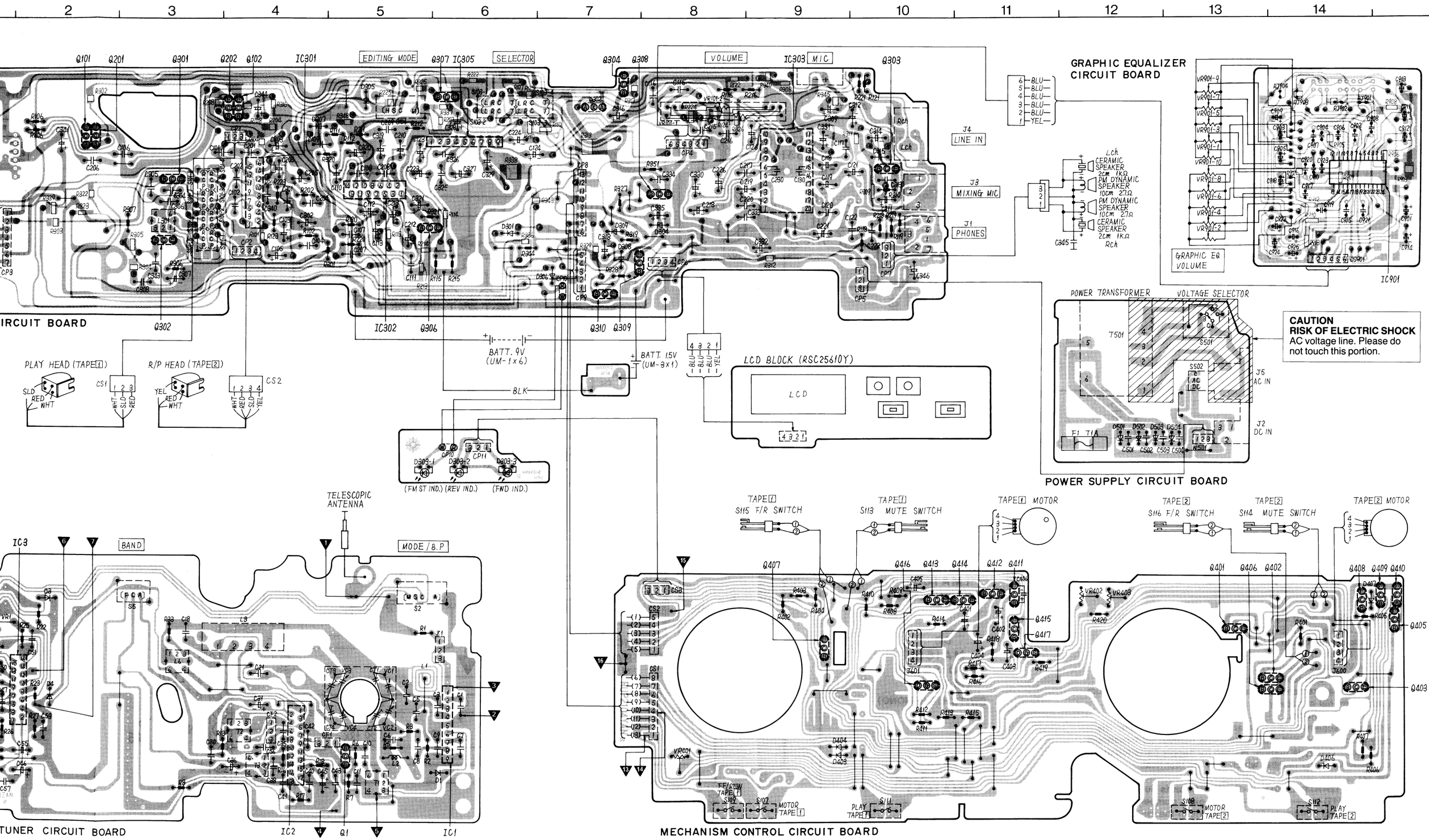
Ref. No.	Part No.	Part Name & Description
VARIABLE CAPACITORS		
VC 1, 2, 3, 4 (CT1, 2, 3, 4)	**RCV4LC2V2K**	Variable Capacitor
VARIABLE RESISTORS		
VR 1	**EVND4AA00B14**	FM VCO Adjustment VR (10kΩ/B)
VR 101	**EWASF2C95B54**	Volume Control (50kΩ/B)
VR 401 [1]	**EVND4AA00B53**	Normal Speed Adjustment (5kΩ/B)
VR 402	**QVNB3A00B103**	High Speed Adjustment (10kΩ/B)
VR 403 [2]	**EVND4AA00B24**	Normal Speed Adjustment (20kΩ/B)
VR 901	**EVBJT0PA1201**	GRAPHIC EQ. Control (1.2kΩ)
CERAMIC FILTERS		
CF 1	**RVF107WDZ**	Ceramic Filter
CF 2	**RVFSFU455B**	Ceramic Filter
FILTER		
Z 1	**RXABPMB6A**	B.P.F.
FUSE		
F 1	**XBA2C10TB0K**	Fuse, T1A ⚠
SWITCHES		
S 2	**RSS3A15Z**	Slide Switch (MODE/BP)
S 5	**RSS2B57Z**	Slide Switch (BAND SELECTOR)
S 101	**RSH2H03W**	Switch (Record/Playback)
S 103	**RSS3D21Z**	Slide Switch (FUNCTION)
S 104	**RSS3A15Z**	Slide Switch (EDITING MODE)
S 107, 108, 109, 111, 112	**RSH1A64Z**	Leaf Switch (MOTOR/FWD/REV)
S 113, 114, 115, 116	**RFA67Z**	Leaf Switch (Muting, FWD/REV)
S 501	**RSR3A01Z**	Rotary Switch (Voltage selector) ⚠
JACKS		
J 1	**RJJD7S2Z**	Jack, Headphones
J 2, 5 (S 502)	**RJJ1F1Y**	Jack, AC/DC in ⚠
J 3	**QJA0172**	Jack, Mixing Mic
J 4	**RJF1096Z**	Jack, Line In



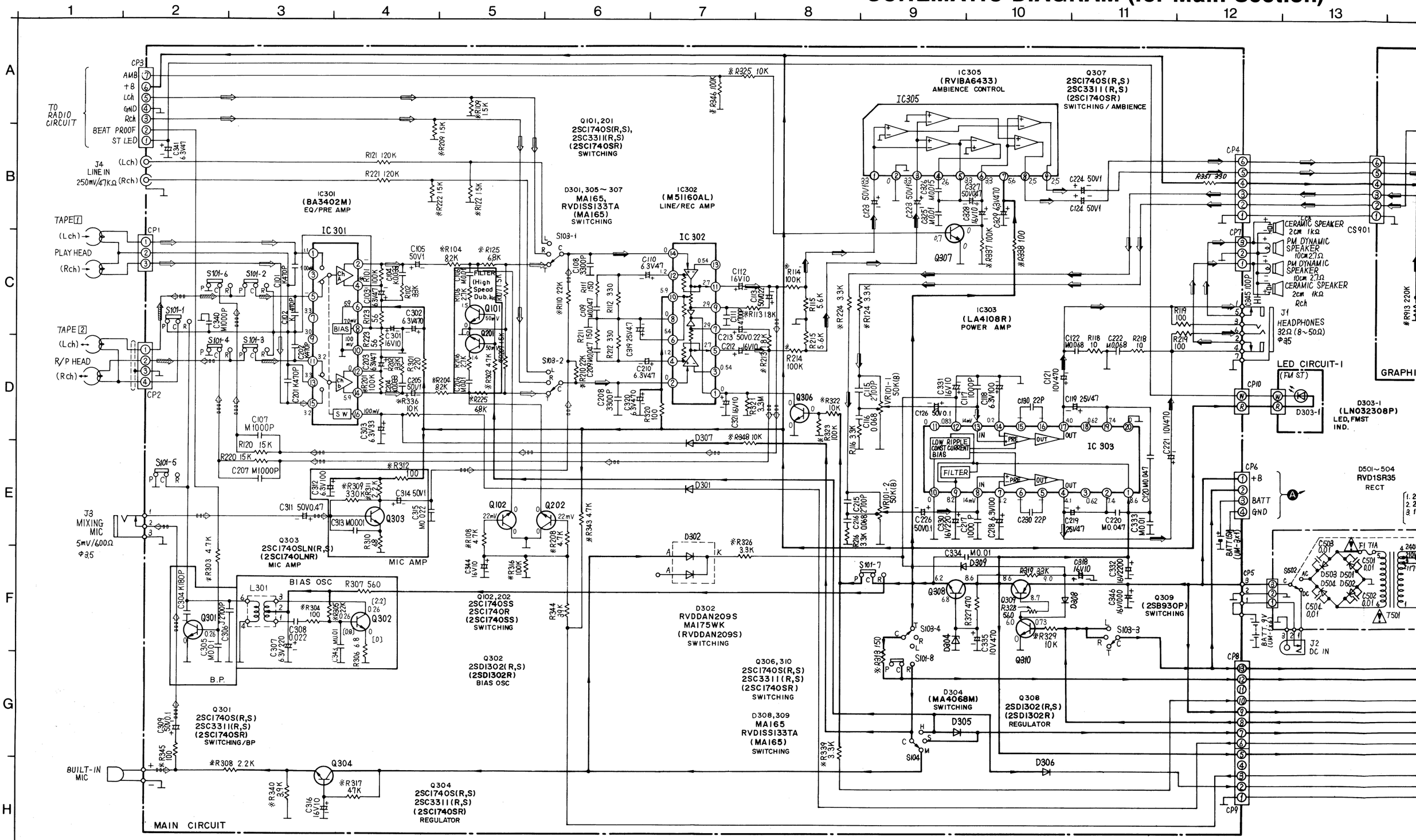
CIRCUIT BOARD AND WIRING CONNECTION DIAG



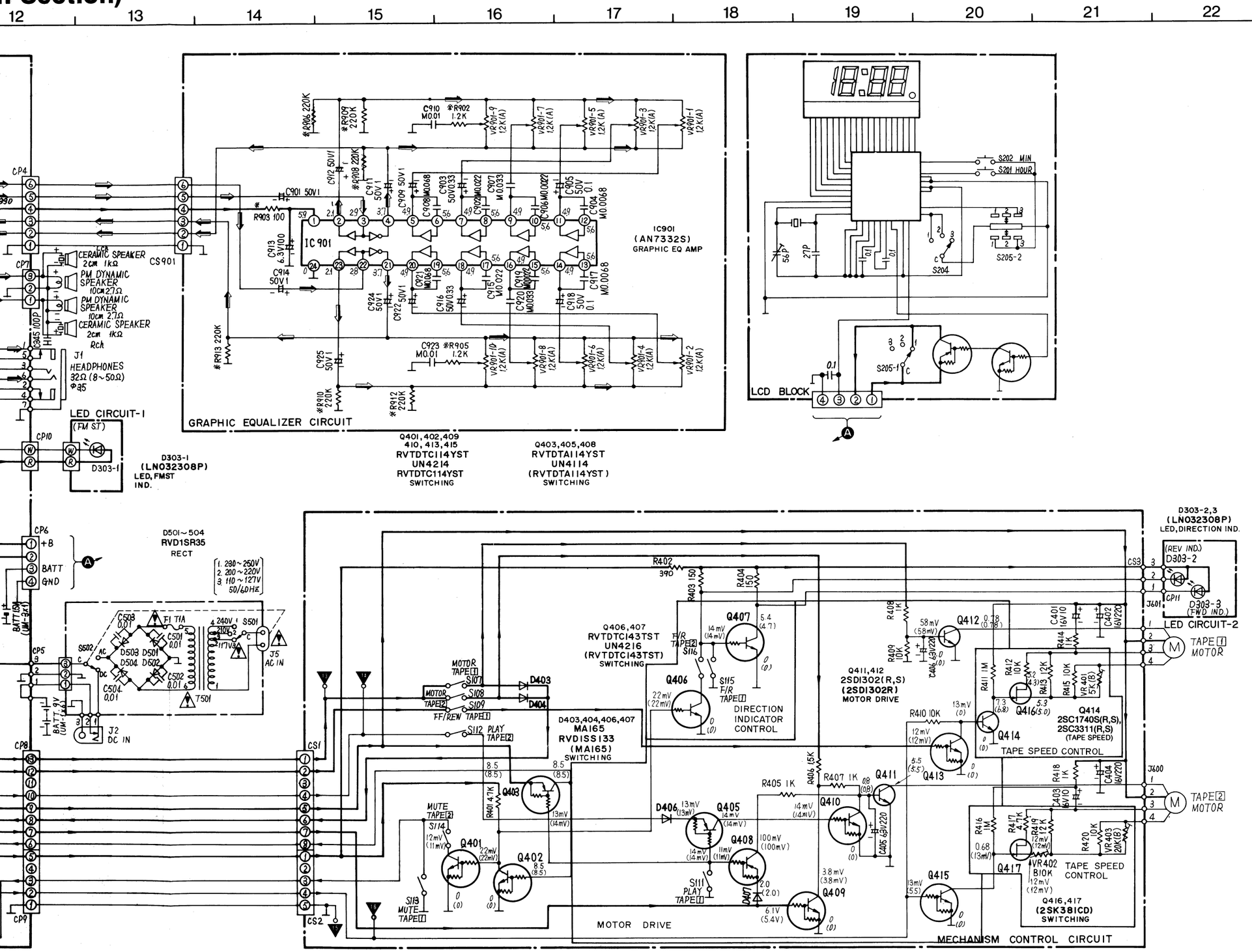
CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM



SCHEMATIC DIAGRAM (for Main Section)



n Section)



: Recording Signal Line
: Main (Tape/Radio) Signal Line
: Playback Signal Line (TAPE 1 or TAPE 2)
: Playback Signal Line (TAPE 2)
: Radio Signal Line
: +B Line

NOTES:

1. S101-1~101-8: Record/Playback switch in "PLAYBACK" position. (P...Playback, R...Record)
2. S103-1~103-4: Function select switch in "Power OFF/Tape" position. (L...Line, R...Radio, T...Power OFF/Tape)
3. S104: Editing Mode select switch in "BUILT-IN MIC" position. (H...High, S...Normal, M...Built-in MiC)
4. S107: Motor switch.....(TAPE 1)
5. S108: Motor switch.....(TAPE 2)
6. S109: FF/REW switch.....(TAPE 1)
7. S111: Play switch.....(TAPE 1)
8. S112: Play switch.....(TAPE 2)
9. S113: Mute switch .....(TAPE 1)
10. S114: Mute switch .....(TAPE 2)
11. S115: FWD/REV switch .....(TAPE 1)
12. S116: FWD/REV switch .....(TAPE 2)
13. S201: Hour Set switch.
14. S202: Minute Set switch.
15. S204: Timer Set select switch in "LOCK" position. (1...Clock, 2...Lock, 3...Timer)
16. S205-1, S205-2: Timer switch in "OFF" position. (1...Off, 2...Sleep, 3...Sleep/Timer)

※ Within the LCD block (RSC25610Y)

17. S501: Voltage select switch
18. S502: AC/DC IN select switch in "DC" position.
19. VR101-1, VR101-2: Volume Control.
20. VR401: Normal Tape Speed adjustment VR.....(TAPE 1).
21. VR402: High Tape Speed adjustment VR.....(TAPE 2).
22. VR403: Normal Tape Speed adjustment VR.....(TAPE 2).
23. VR901-1~VR901-10: Equalizer control VR.
24. (*) mark...Printed resistoe.
25. The mark ▼ shows test point e.q.▼=test point 1.
26. DC voltage measurement are taken with electronics voltmeter from negative terminal of battery.
    ( )...High Speed, No mark...Normal Speed,
    [ ]...Recording Position
27. Battery current: Maximum output
    Tape/Playback.....900mA
    Tape/Recording.....650mA
    Normal Speed Dubbing.....1.0A
    High Speed Dubbing 1.05A
28. Described in schematic diagram are two types of numbers; the supply parts number and production parts number for transistors and diodes. One type number is used for supply parts number and production parts number which they are identical.
    e.g. Q1
    2SC2412NRTB, LNSTB —— Production parts number
    (2SC2412) —————— Supply parts number
29. The supply parts number is described alone in the replacement parts list.
30. Important safety notice.
    Components identified by ⚠ mark have special characteristics important for safety.
    When replacing any of these components, use only manufacturer's specified parts.
31. a. The symbols ( ) shown in the circuit board indicate printed resistor.
    b. The circuit shown in ( ) on the conductor indicates printed circuit on the back side of the printed circuit board.
    c. The symbols (●) shown in the circuit board indicate connection points between conductors on the front side and back side of the circuit board.

• This schematic diagram may be modified at any time with the development of new technology.

MEASUREMENTS AND ADJUSTMENTS

■ ALIGNMENT INSTRUCTION

This radio-cassette recorder has timer and clock functions, which, when the LCD block is removed, will not operate at all. When checking operation or performing measurement or adjustment, be sure the LCD block connector is connected.

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

1. Set volume control to maximum.
2. Set graphic equalizer to center.
3. Set band switch to AM or FM.
4. Set function selector to radio.
5. Dubbing select switch to normal.
6. Set power source voltage to 9V DC.
7. Output of signal generator should be no higher than necessary to obtain an output reading.

■ AM ALIGNMENT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR CONNECTIONS	SIGNAL GENERATOR or SWEEP GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
			AM-IF ALIGNMENT				
(1)	AM	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455kHz 30% Mod. at 400Hz	Point of non-interference. (on/about 600kHz)	Output meter across voice coil.	T2 (AM IFT)	Adjust for maximum output.
			AM-RF ALIGNMENT				
(2)	AM	〃	511kHz	Tuning capacitor fully closed.	〃	L6 (AM OSC Coil)	Adjust for maximum output.
(3)	AM	〃	1,660kHz	Tuning capacitor fully open.	〃	CT4 (AM OSC Trimmer)	〃
(4)	AM	〃	550kHz	Tune to signal.	〃	(*1) L3 (AM ANT Coil)	Adjust for maximum output. Adjust L3 by moving coil bobbin along ferrite core.
(5)	AM	〃	1,500kHz	〃	〃	CT3 (AM ANT Trimmer)	Adjust for maximum output. Repeat steps (2)~(5).

(*1) Cement antenna bobbin with wax after completing alignment.

■ FM ALIGNMENT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR CONNECTIONS	SIGNAL GENERATOR or SWEEP GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
			FM-IF ALIGNMENT				
(1)	FM	High side thru. 0.001μF to test point ▼3. Negative side to test point ▼2.	10.7MHz (SWP.)	Point of non-interference. (on/about 90MHz)	Connect vert. amp. of scope to test point ▼4 Negative side to test point ▼5.	T1 (FM 1st IFT)	Adjust for maximum amplitude. (Refer to fig. 2.)
(2)	FM	〃	〃	〃	〃	T3 (FM 2nd IFT)	Adjust for maximum amplitude. (Refer to fig. 3.)
			FM-RF ALIGNMENT				
(3)	FM	Connect to test point ▼1 through FM dummy antenna. Negative side to test point ▼2.	86.2MHz	Variable capacitor fully closed.	Output meter across voice coil.	L2 (FM OSC Coil)	(*2) Adjust for maximum output.
(4)	FM		109.2MHz	Variable capacitor fully open.	〃	CT2 (FM OSC Trimmer)	〃
(5)	FM		106MHz	〃	〃	CT1 (FM ANT Trimmer)	(*2) Adjust for maximum output. Repeat steps (3)~(5).

(*2) Three output responses will be present; proper tuning is the center frequency.

■ SEPARATION ALIGNMENT

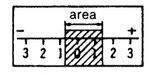
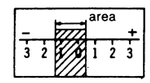
ITEM	FM SIGNAL GENERATOR SOURCE CONNECTION	EQUIPMENT CONNECTION ELECTRONIC COUNTER	ADJUSTMENT	SPECIFICATION	REMARKS
Adjustment of pilot signal.	98MHz, 60dB (CW) Connect to test point ▼1 through FM dummy antenna. Negative side to test point ▼2.	▼6...(+) ▼7...(−)	VR1	19kHz±100Hz	Adjust VR1, for 19kHz (±100Hz) reading on electronics counter.

■ TAPE ADJUSTMENT

ITEM	INPUT	MEASUREMENT POINT	SPECIFICATION	ADJUSTMENT POINT	REMARKS
Azimuth	QZZCFM (8kHz, −20dB)	Headphone Jack	Maximum output.	Azimuth screw	1. Adjust the FWD and REV outputs and inputs to their maximum values and lock the screw in place. (Perform for both Tape [1] and Tape [2].) 2. Refer to Fig. 4.

■ TAPE SPEED ADJUSTMENT

Adjust the Normal speed and High speed of Tape [1] and the High speed and Normal speed of Tape [2] in that order.

	ITEM	INPUT	MEASUREMENT POINT	ADJUSTMENT POINT	REMARKS
(1)	Tape speed adjustment for Normal speed Tape [1].	QZZCWAT (3kHz)	Headphones jack	VR401	1. 3010Hz±30Hz (Refer to the figure at right when using a drift meter.)  (Drift meter)
(2)	Tape speed measurement of High speed Tape [1]	QZZCWC (1.5kHz)	Headphones jack	—	1. Connect TP13 and TP14. Then Connect a 3.3kΩ resistor between TP15 and TP16 to set Tape [1] to High speed. 2. Read the frequency at this time. **Note:** There is no adjustment; this frequency is used to adjust the High speed frequency of Tape [2].
(3)	Tape speed adjustment for High speed Tape [2]	QZZCWC (1.5kHz)	Headphones jack	VR402	1. Connect TP13 and TP14. Then connect a 3.3kΩ resistor between TP15 and TP16 to set Tape [2] to High speed. 2. Adjust to within +20~−75Hz of the High speed tape frequency of Tape [1]. **Note:** Perform this adjustment after step (2) and (3) above.
(4)	Tape speed adjustment for Normal speed Tape [2]	QZZCWAT (3kHz)	Headphones jack	VR403	1. Disconnect the short between TP13 and TP14. Then disconnect the 3.3kΩ resistor between TP15 and TP16 to return Tape [2] to Normal speed. 2. Ratings; 3000Hz±10Hz, −40Hz (Refer to the figure at right when using a drift meter.)  (Drift meter)

Note: An extension cable (RZZ0418) can be used to connect the tuner circuit board.

■ ADJUSTMENT POINT

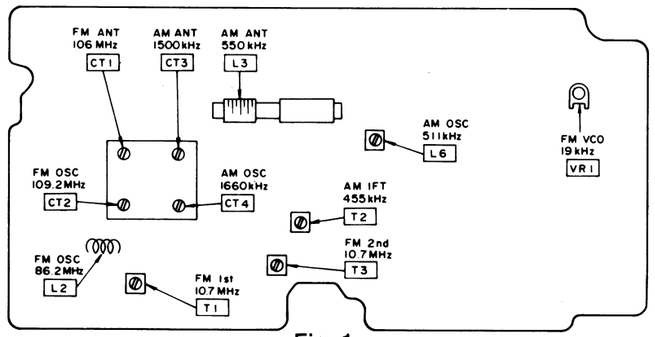


Fig. 1

Fi

REPLACEMENT PARTS LI

Important safety notice
Components identified by ⚠ mark
characteristics important for safety
When replacing any of these com
only manufacturer's specified parts

Ref. No.	Part No.	Part
		CABINET PA
K 1	**RUB9023Z**	Lever,
K 2	**XTN2+8B**	Screw Panel,
K 3	**XTN3+50G**	Screw (Front
K 4	**RKK213Z**	Battery
K 5	**RBD424Z**	Knob,
K 6	**RBD401Y**	Knob,
K 7	**RBD402Y**	Knob, Editing
K 8 [1]	**RBD404Y**	Knob,
K 9	**RBD403Y**	Knob,
K 10	**RBN709Y**	Knob,
K 11	**RYFXFW32MF**	Rear C
K 11-1	**RJC50004Z**	Termin
K 12	**RYPXFW32M**	Casset
K 13	**RYG1XFW32M**	Casset
K 14	**RYMXFW32MF**	Front C
K 15	**RYAFW32M**	Dial Ch
K 16	**RYG2XFW32M**	Casset
K 17	**XEARR225CAY**	Telesc
K 18	**XYN3+F15FY**	Screw
K 19	**RSC25610Y**	LCD Bl
K 20	**RGP1054Y**	Casset
K 21	**RUS665Z**	Spring,
K 22	**RDG5782Z**	Gear, D
K 23	**XWG2**	Washe Dial Ch
K 24	**XTC3+10CFN**	Screw
K 25	**RKH144Z**	Handle
K 26	**RKX357Z**	Arm, H
K 27	**EAS10P241J**	Speake
K 28	**XTV3+8G**	Screw
K 29	**RDT5193Z**	Shaft,
K 30	**XUC3FT**	Ring, 3

RKS

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RKS

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e [1]

used to
2].
.3kΩ
e [2] to

speed

(3) above.

P14.
en TP15
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area
1 2 3
ft meter)

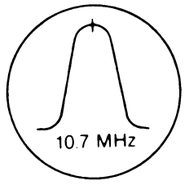


Fig. 2

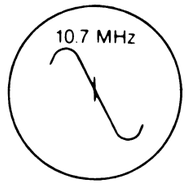


Fig. 3

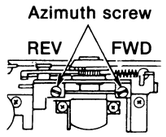


Fig. 4

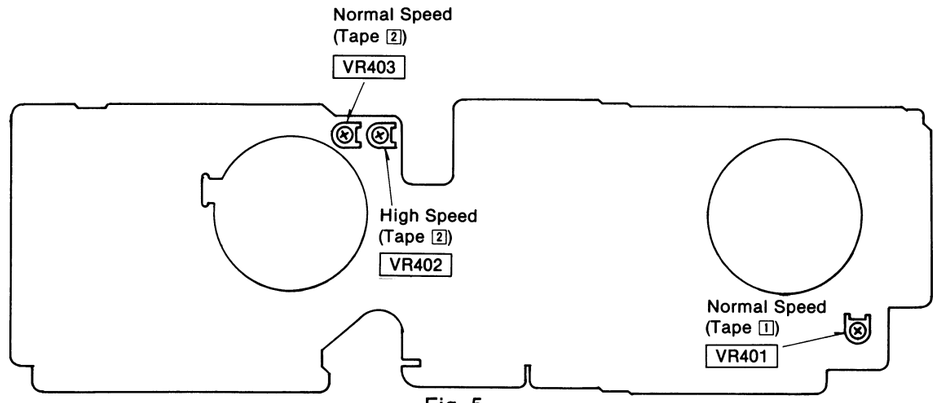


Fig. 5

CABINET PARTS LIST

REPLACEMENT PARTS LIST
Important safety notice
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

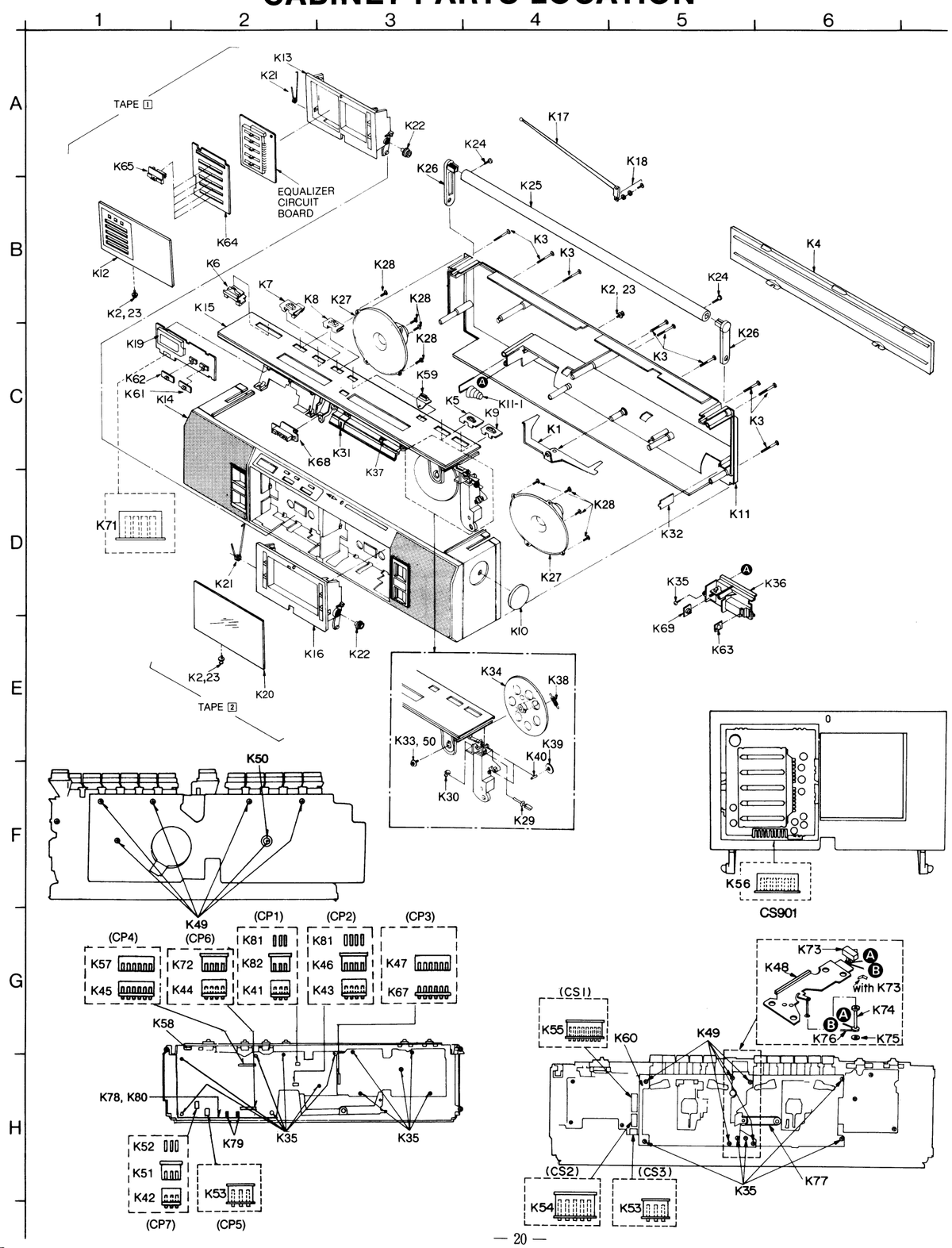
The letter in the circle after the part name indicates the color of the part.
Ⓚ...Black, Ⓦ...White
Ⓢ...Silver, Ⓖ...Green
Ⓡ...Red

Ref. No.	Part No.	Part Name & Description
		CABINET PARTS
K 1	RUB9023Z	Lever, Record/Playback
K 2	XTN2+8B	Screw ⊕2×8 (Cassette Panel, Dial Chassis M'tg)
K 3	XTN3+50G	Screw ⊕3×50 (Front Cabinet M'tg)
K 4	RKK213Z	Battery Cover Ⓚ
K 5	RBD424Z	Knob, Band Selector Ⓢ
K 6	RBD401Y	Knob, Volume Ⓢ
K 7	RBD402Y	Knob, Function Selector Editing Ⓢ
K 8 [1]	RBD404Y	Knob, Reverse Mode Ⓢ
K 9	RBD403Y	Knob, Mode/B.P. Switch Ⓢ
K 10	RBN709Y	Knob, Tuning Ⓚ
K 11	RYFXFW32MF	Rear Cabinet Ass'y Ⓚ
K 11-1	RJC50004Z	Terminal, Battery (−)
K 12	RYPXFW32M	Cassette Panel [1] Ass'y Ⓚ
K 13	RYG1XFW32M	Cassette Holder [1] Ass'y Ⓚ
K 14	RYMXFW32MF	Front Cabinet Ass'y Ⓚ
K 15	RYAFW32M	Dial Chassis Ass'y Ⓚ
K 16	RYG2XFW32M	Cassette Holder [2] Ass'y Ⓚ
K 17	XEARR225CAY	Telescopic Antenna
K 18	XYN3+F15FY	Screw ⊕3×15 (Antenna M'tg)
K 19	RSC25610Y	LCD Block
K 20	RGP1054Y	Cassette Panel [2]
K 21	RUS665Z	Spring, Cassette Holder
K 22	RDG5782Z	Gear, Dumper
K 23	XWG2	Washer 2φ (Cassette Panel, Dial Chassis M'tg)
K 24	XTC3+10CFN	Screw ⊕3×10 (Handle M'tg)
K 25	RKH144Z	Handle Ⓚ
K 26	RKX357Z	Arm, Handle Ⓢ
K 27	EAS10P241J	Speaker, Woofer
K 28	XTV3+8G	Screw ⊕3×8 (Speaker M'tg)
K 29	RDT5193Z	Shaft, Tuning
K 30	XUC3FT	Ring, 3φ (Tuning Shaft)

Ref. No.	Part No.	Part Name & Description
K 31	RDP328Z	Pointer Ⓦ
K 32	RJC215Z	Terminal, Battery(+)
K 33	XSN26+5	Screw ⊕2.6×5 (Dial Drum M'tg)
K 34	RDD5013Z	Dial Drum
K 35	XTV3+10G	Screw ⊕3×10 (Main Circuit Board, Mechanism Chassis Tuner Circuit Board etc. M'tg)
K 36	RKE547Z	Holder, Battery Ⓚ
K 37	RDZ05Z	Cord, Dial
K 38	RDS4090A	Spring, Dial Drum
K 39	RDR20-3	Roller, Dial Chassis
K 40	RDY43Z	Shaft, Roller
K 41	RJP3G10Z	Plug, 3P
K 42	RJP3G4Y	Plug, 3P
K 43	RJP4G10Z	Plug, 4P
K 44	RJP4G20Z	Plug, 4P
K 45	RJP6G20Z	Plug, 6P
K 46	RJS4L4Z	Socket, 4P
K 47	RJS7M2Y	Socket, 7P
K 48	RZUXFW32M	Mechanism Gang Angle Ass'y
K 49	XTV26+6B	Screw ⊕2.6×6 (Mechanism Circuit Board M'tg)
K 50	XWA26B	Washer 2.6φ (Dial Drum, etc.)
K 51	RJS3L3Z	Socket, 3P
K 52	RJT707Z	Contact, Socket
K 53	RJS3T5Z	Socket, 3P
K 54	RJS5T3Z	Socket, 5P
K 55	RJS8T3Z	Socket, 8P
K 56	RJS6L15Z	Socket, 6P
K 57	RJS6L16Z	Socket, 6P
K 58	RJM164Z	Microphone
K 59	RBC917Z	Button, Direction Ⓖ
K 60	RMD1140Z	Angle, Mechanism Reinforcement

Ref. No.	Part No.	Part Name & Description
K 61	RBD413Y	Knob, Timer Switch Ⓡ
K 62	RBD413Z	Knob, Timer Set Selector Ⓢ
K 63	RJC364X	Terminal, Clock Battery (+)
K 64	RKE553Z	Caver, Graphic Equalizer Ⓚ
K 65	RBD405Z	Knob, Graphic Equalizer Ⓢ
K 67	RJP7G22Z	Plug, 7P
K 68	RUP2103X	Circuit Board (LED, Clock Battery)
K 69	RJC751Z	Terminal, Clock Battery (−)
K 71	RJS4L15Z	Socket, 4P
K 72	RJS4L16Z	Socket, 4P
K 73	RSE218Z	Counter
K 74	RDR87Z	Roller, Counter
K 75	RNW164Z	Washer (Counter Roller M'tg)
K 76	RDV68Z	Counter Belt (A)
K 77	RDV69Z	Counter Belt (B)
K 78	RMC1098Z	Shield Plate (for T501)
K 79	RJF28Z	Fuse Holder ⚠
K 80	RUP2099X	Circuit Board (Power) ⚠
K 81	RJT807Z	Contact, Socket
K 82	RJS3L4Z	Socket, 3P
		ACCESSORIES
A 1	RJA22X	Power Cord, AC ⚠
A 2	RQX4876ZA	Operating Instructions
		PACKINGS
P 1	RPH526Z	Polyethylene Cover
P 2	RPE605Z	Button Spacer
P 3	RPN9523Z	Pad
P 4	RPK2307Z	Inside Carton

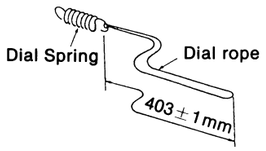
CABINET PARTS LOCATION



DIAL THREADING

1. Cut the rope to about a 1,000mm length and tie it in a loop.
   Next, tie one end of the rope to the spring so that the rope loop is 403±1mm long.
2. Attach the rope in the order of the numbers show in the figure. (When attaching the rope, attach adhesive tape to the dial drum to prevent it from turning.)

Note:
Wrap the rope around the tuning shaft four times.
After attaching the rope, check to be sure that the dial spring extends to within 24~28mm.



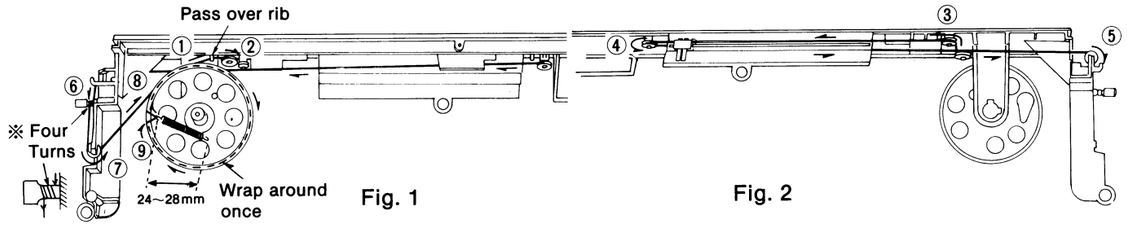


Fig. 1

Fig. 2

- **Basic Operation of the Graphic Equalizer**

As shown in Fig. 1, the graphic equalizer divides the audio frequency into a number of frequency bands and gives the tuned frequencies (e.g., 150Hz, 300Hz, 1kHz, 3.3kHz, 10kHz) of each of the bands a resonance characteristic that either maximizes or minimizes their sound pressure level.
By changing this level, the user can create the frequency response desires. (See Fig. 1.)

In the basic composition of the circuit, signal (a) which is in phase with the input, and signal (b) which is in reverse phase with the input, are connected to a B.P.F. (band-pass filter) through a volume control.
If the control is on the A side, the level is increased, and if is on the B side, the level is decreased. (See Fig. 2.)

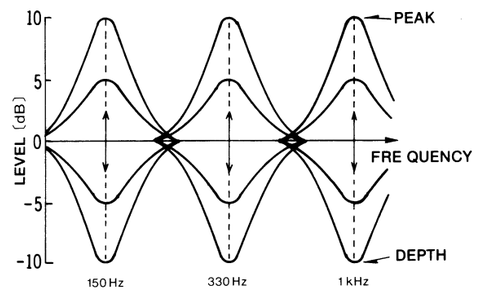


Fig. 1

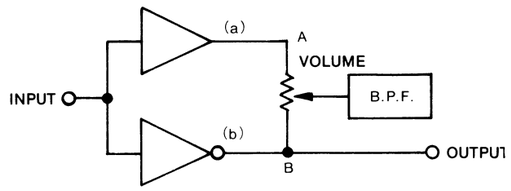


Fig. 2

- **Types of Filteres**

The filter used in the circuit of audio devices are divided up into the following four main types.
This model uses a B.P.F. (C of Fig. 3) which is composed of an amplifier in IC901 and an external capacitor.

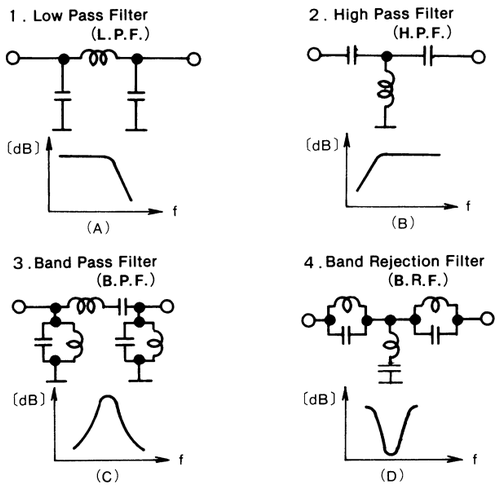


Fig. 3

DISASSEMBLY PROCEDURES FOR THE MAJOR MECHANICAL PARTS

- **Disassemblying Mechanisms [1] and [2]**

After removing the circuit board (see disassembly procedure), remove the four screw (K49) to remove mechanisms [1] and [2]. (See Fig. 1.)

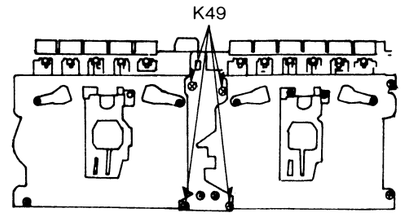


Fig. 1

- **Removing the Head**

Removing the two screws (M1).
(be sure to adjust the azimuth when reattaching.)
(See Fig. 2.)

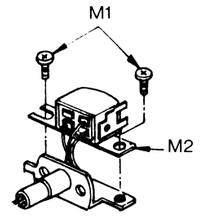


Fig. 2

- **Removing the Erase Head (Only for Tape 2)**

Remove the screw (M23). (See Fig. 3.)

- **Removing the Pinch Roller**

Remove the washer (M14). (See Fig. 4.)

- **Removing the Reel Table.**

Pull the reel table up to remove it.

- **Removing the Motor**

1. Remove the two screws (M104).
2. Remove the belt (M98).
3. Remove the two screws (M99).
   (See Fig. 5.)

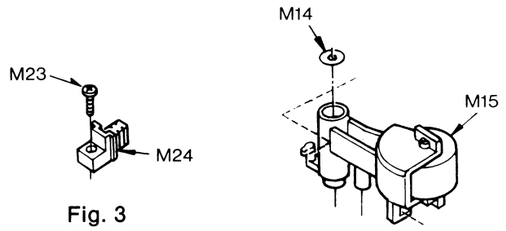
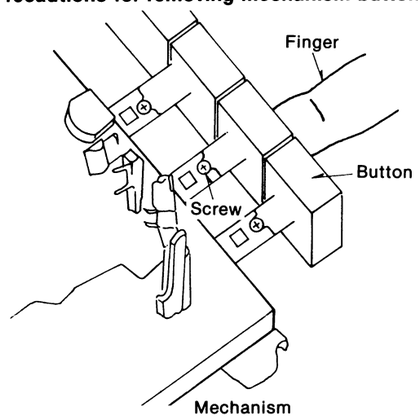


Fig. 3

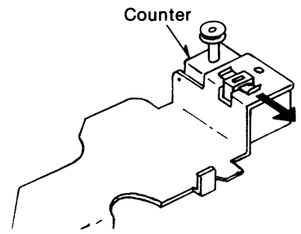
Fig. 4

- **Precautions for removing mechanism button**



When removing the mechanism buttons, be sure to depress the buttons while turning their respective screws.

■ HOW TO DISASSEMBLE THE COUNTER



Pull out the counter fixed spring in the direction of arrow.

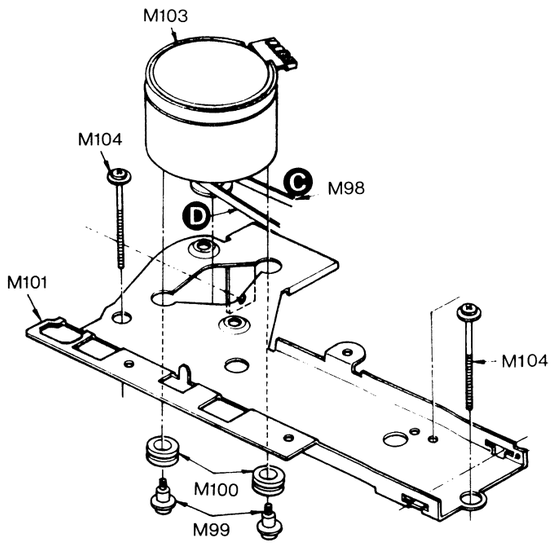
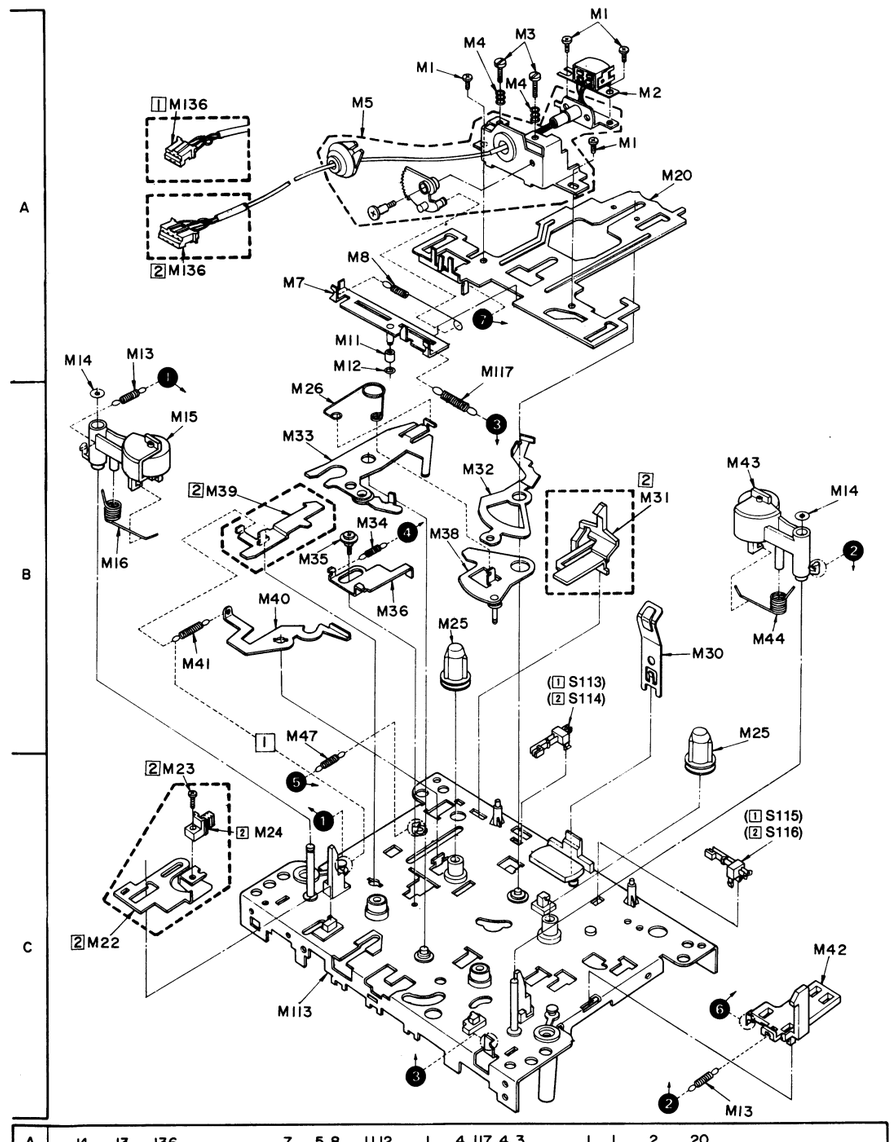


Fig. 5

MECHANISM PARTS LOCATION

NOTES:
[1]...TAPE [1] (PLAY DECK)
[2]...TAPE [2] (REC/PLAY DECK)

(Top View)



| | | |

■ MECHANISM PARTS LIST

REPLACEMENT PARTS LIST

The letter in the circle after the part name indicates the color of the part.
Ⓢ... Silver

Notes:
[1]... TAPE-1 (PLAY DECK)
[2]... TAPE-2 (REC/PLAY DECK)

Ref. No.	Part No.	Part Name & Description
	MECHANICAL PARTS	
M 1	XSN2+3	Screw ⊕2×3 (Head, Head Frame etc., M'tg)
M 2	RJH4C29GZ	Head, Record/Playback (Tape [2]) Playback (Tape [1])
M 3	RFE263Z	Screw (Head Frame M'tg)
M 4	RFS597Z	Spring, Azimuth ADJ
M 5	RFU84Z	Head Frame Ass'y
M 6	RFK19Z	F.F. Idler Ass'y
M 7	RFY654Z	Slide Plate Ass'y
M 8	RFS598Z	Spring, Slide Plate Ass'y
M 11	RFX139Z	Collar (C)
M 12	RFN160Z	Washer, Slide Plate Ass'y
M 13	RFS599Z	Spring, Pinch Roller Ass'y
M 14	RFN110Z	Washer, (Pinch Roller Ass'y M'tg)
M 15	RFR37Z	Pinch Roller (L) Ass'y
M 16	RFS600Z	Spring, Pinch Roller (L) Ass'y
M 17	RFE267Z	Screw, (DR Coupling Arm)
M 18	RFY655Z	Arm, DR Coupling
M 19	RFD255Z	Angle, (DR Coupling Arm M'tg)
M 20	RFU85Z	Head Base
M 22 [2]	RFD256Z	Holder, Erase Head
M 23 [2]	XSN17+5	Screw ⊕17×5 (Erase Head M'tg)
M 24 [2]	RJH2C14XZ	Head, Erase
M 25	RFE257Z	Reel Lug
M 26	RFS601Z	Spring, Reverse
M 30	RFS602Z	Spring, Cassette Tape Holder
M 31 [2]	RFY656Z	Lever, Erase Safety
M 32	RFD257Z	Lever, Reverse (A)
M 33	RFY657Z	Reverse (A) Lever Ass'y
M 34	RFS603Z	Spring, Stopper Plate
M 35	RFE265Z	Screw (Stopper Plate M'tg)
M 36	RFD258Z	Stopper Plate
M 38	RFD259Z	Adler Plate Ass'y
M 39 [2]	RFD260Z	Lever, Record Inhibit
M 40	RFD261Z	Lever, MO Coupling
M 41	RFS604Z	Spring, MO Coupling Lever
M 42	RFY658Z	Lever, Latch
M 43	RFR38Z	Pinch Roller (R) Ass'y
M 44	RFS605Z	Spring, Pinch Roller (R) Ass'y
M 45	RFS606Z	Spring, DR Lever
M 46	RFY659Z	Lever, DR
M 47	RFS607Z	Spring, Mode Plate
M 48	RFD262Z	Plate, Mode
M 49	RFY560Z	Lever, Mode Plate
M 50	RFS608Z	Spring, Mode Plate
M 51	RFY661Z	Lever, Detection
M 52	RFE259Z	Rod, Detection
M 53	RFE260Z	Stopper, Detection Rod
M 54	RFS609Z	Spring, Detection Rod
M 55	RFY662Z	Lever, Release
M 56	RFS610Z	Spring, Head Base
M 57 [2]	RFS611Z	Spring, Record Lever
M 58	RFS612Z	Spring, Playback Lever
M 59	RFD264Z	Switch Plate
M 60 [2]	RFY663Z	Lever, Record
M 61	RFY664Z	Lever, Playback
M 62	RFY665Z	Lever, Rewind
M 63	RFY666Z	Lever, Fast Forward
M 64	RFY667Z	Lever, Stop/Eject
M 65	RFY668Z	Lever, Pause
M 66	RFE261Z	Screw (Playback Lever, etc. M'tg)
M 67	RFS613Z	Spring, Pause, Stop/Eject
M 68	RFY669Z	Lever, Cue
M 69	RFY670Z	Arm, Pause Lever
M 70	RFS622Z	Spring, Latch Lever
M 71	RFX142Z	Cluch Stopper
M 72	RFD265Z	Plate, Detection Inhibit
M 74	RFY671Z	Arm, Pause
M 75	RFS615Z	Spring, FF/REW Lever
M 76	RFS616Z	Spring, FF/REW Lever
M 77	RFG90Z	Gear, Idler
M 78	RFN162Z	Washer, Idler Gear
M 79	RFD263Z	Fast Forward Idler Plate Ass'y
M 80	RFY672Z	Lever, Detection Inhibit
M 81	RFJ58Z	Reel Table (L) Ass'y
M 82	RFJ59Z	Reel Table (R) Ass'y
M 87	RFQ44Z	Pulley, Drive
M 88	RFN163Z	Washer, FF Idler, Drive Pulley, etc. M'tg
M 89	RFN164Z	Washer, Flywheel
M 90	RFS619Z	Spring, Flywheel (R) Ass'y
M 91	RFS620Z	Spring, Flywheel (L) Ass'y
M 92	RFF41Z	Flywheel (R) Ass'y
M 93	RFF42Z	Flywheel (L) Ass'y
M 94	RFE258Z	Collar, Flywheel Ass'y
M 95	RFN116Z	Washer, Flywheel Ass'y
M 96	RFB69Z	Belt, Drive Pulley
M 97	RFQ45Z	Tension Pulley Ass'y
M 98	RFB70Z	Belt, Motor Ass'y
M 99	RFE142Z	Screw (Motor Ass'y M'tg)
M 100	RFI24Z	Cushion, Motor Ass'y
M 101	RFE262Z	Blacket, Flywheel Ass'y
M 103	RFM78Z	Motor Ass'y
M 104	RFE268Z	Screw (Flywheel Blacket M'tg)
M 105	RFS621Z	Spring, Direction Plate
M 106	RFD266Z	Plate, Direction
M 107	RFY673Z	Rod, Slide (B)
M 108 [1]	RFY678Z	Rod, Slide (A)
M 108 [2]	RFY674Z	Rod, Slide (D)
M 109	RFN165Z	Washer, Switch Plate (B)
M 110	RFS617Z	Spring, Slide Rod
M 111	RFD267Z	Switch Plate (B)
M 112	RFD268Z	Plate, Button Holder
M 113	RFU86Z	Mechanism Base Ass'y
M 115	RFG91Z	Gear, Forward
M 116	RFX143Z	Washer, F.F Idler Plate
M 117	RFS618Z	Spring, Slide Plate Ass'y
M 120	RFY675Z	Plate, Mode Select
M 121	RFE269Z	Screw, (Mode Select Plate M'tg)
M 128 [1]	RFX144Z	Stopper (Release Lever M'tg)
M 129 [2]	RBC909Z	Button, Record Ⓢ
M 130	RBC904Z	Button, Pause Ⓢ
M 131	RBC905Z	Button, Stop/Eject Ⓢ
M 132	RBC906Z	Button, Fast Forward Ⓢ
M 133	RBC907Z	Button, Rewind Ⓢ
M 134 [1]	RBC908Z	Button, Playback Ⓢ
M 134 [2]	RBC908YA	Button, Playback Ⓢ
M 135	RHE5110Z	Screw (Button M'tg)
M 136 [1]	RZW1XFW32J	Lead Wire (A) Ass'y
M 136 [2]	RZW2XFW32J	Lead Wire (B) Ass'y

Specifications

Playback torque	25~60g · cm
Fast Forward torque	75~135g · cm
Rewind torque	75~135g · cm
Pressure of pressure roller	220~330g
Wow and flutter	Less than 0.2% (WRMS)

Screw Dimensions Quick Reference

- Dimensions

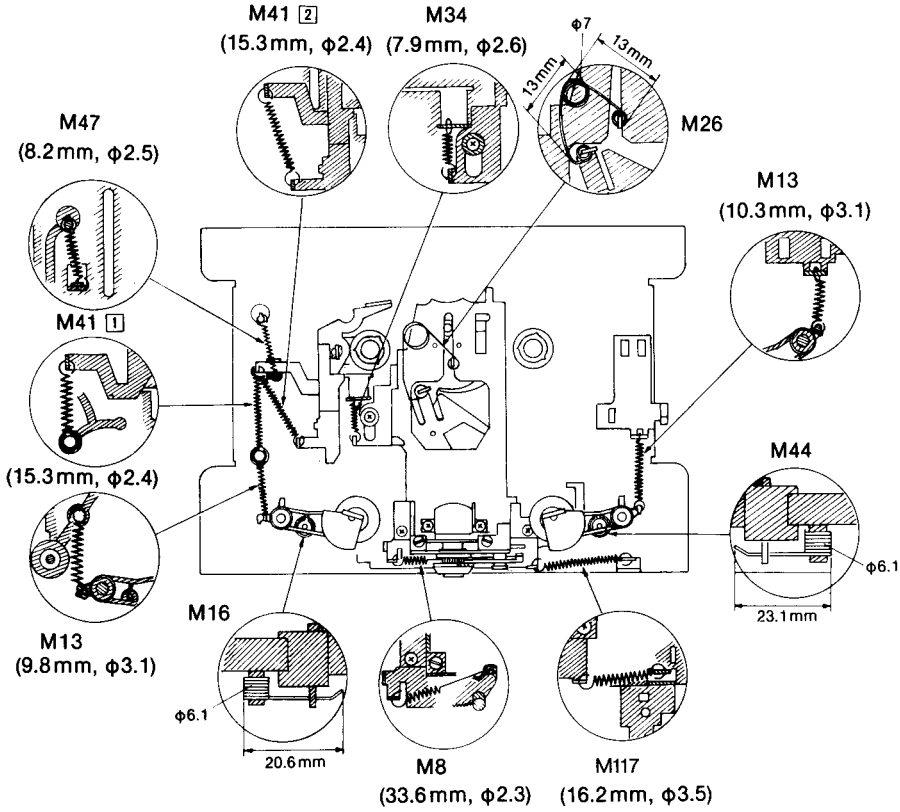
XSN 3 + 10 = Pan head machine screw, 3mm in diameter, 10mm long.
Type/Diameter/Length

- Types

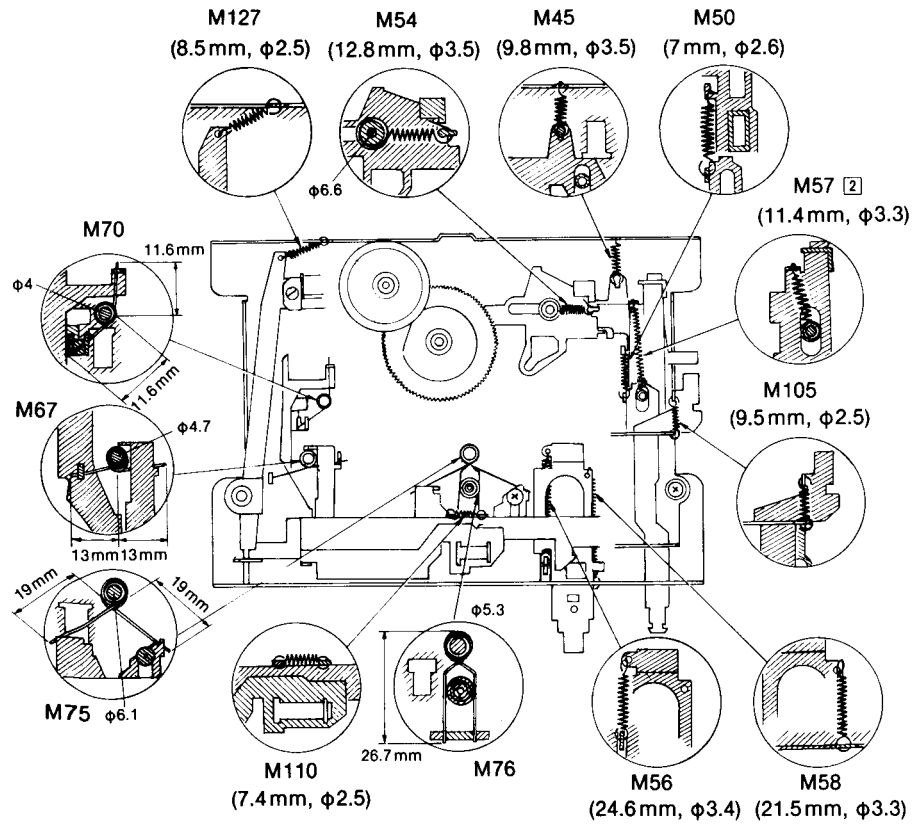
Precision machine screw	Machine screw	Tapping/Tap-tight machine screw
XQC Flat head	XSB Binding head	XTB Binding head
XQG Oval fillister head	XSC Oval countersunk head	XTC Oval countersunk head
XQH Flat fillister head	XSH Flat fillister head	XTN Pan head
XQS Flat head	XSN Pan head	XTS Flat head
	XSS Flat head	

D

■ SPRING LOCATION (Top View)



■ SPRING LOCATION (Rear View)



ℓ ×D (mm)	
M4	**M90**
4.7×3.2	19.0×3.2
M91	
19.0×3.2	
ℓ ×D (mm)	
M8	**M13**
33.6×2.3	9.3×3.1
M34	**M41**
7.9×2.6	15.3×2.4
M45	**M47**
9.9×3.5	8.2×2.5
M50	**M54**
7.0×2.6	12.8×3.5
M56	**M57**
24.6×3.4	11.4×3.3
M58	**M110**
21.5×3.3	7.4×2.5
M117	
16.2×3.5	
ℓ1 ℓ1 Long D ℓ2 Short ℓ2 ℓ1×ℓ2×D (mm)	
M16	**M26**
20.6×8.0×6.1	21.7×16.5×7.9
M44	**M67**
23.1×8.5×6.1	13.0×13.0×4.7
M70	**M75**
11.6×11.6×4.0	19.0×19.0×6.1
M76	
26.7×26.7×5.3	

GAD K.K ME MF Printed in Japan (H)

D

ORDER NO. AD8909267S2

Service Manual

Supplement

Radio Cassette
RX-FW39L

Stereo Radio Cassette Recorder

Color

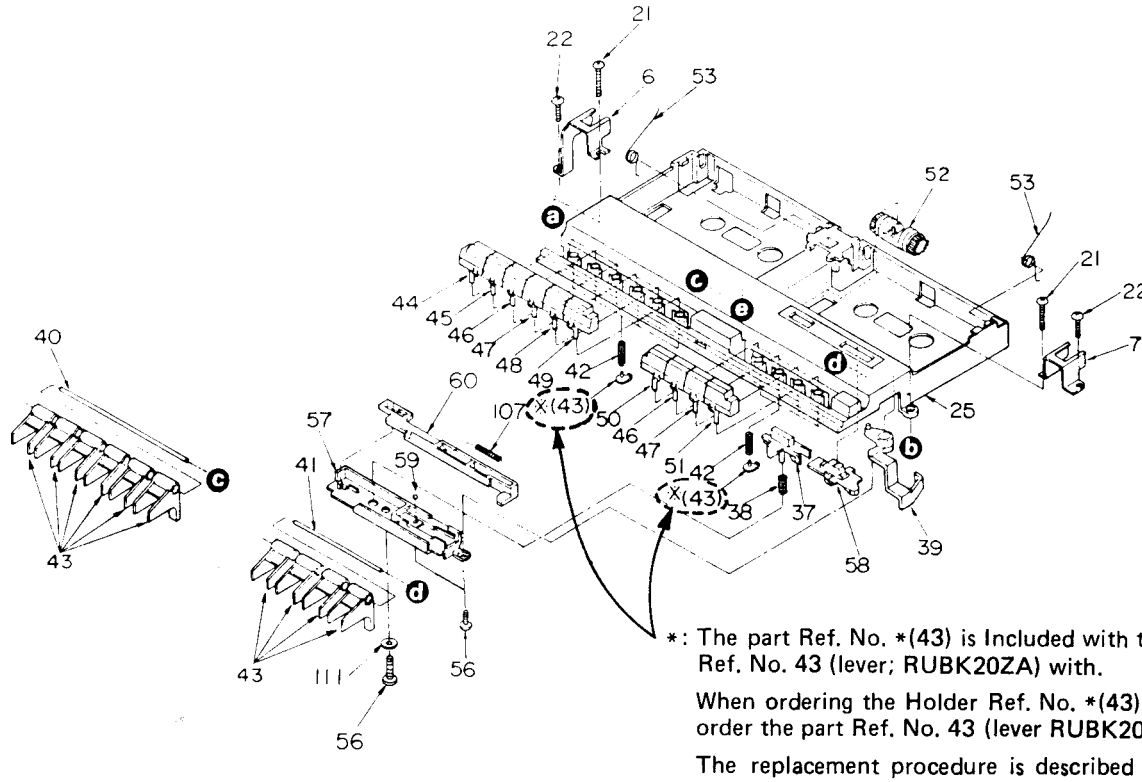
(K)... Black Type

Area

Country Code	Area	Color
(Z) (ZF)	Continental Europe	(K)
(ZE)	Great Britain	
(ZG) (Zi)	F.R. Germany/Italy	

Please file and use this supplement manual together with the service manual for Model No. RX-FW39L (Z), (ZE), (ZF), (Zi), (ZG) Order No. GAD8707150C2.

The purpose of this supplement is to provide supplementary description of the part with reference number *(43), which was missing from the description in the "Cabinet Parts Locations" section (p. 6) of the original Service Manual.



*: The part Ref. No. *(43) is Included with the part Ref. No. 43 (lever; RUBK20ZA) with.

When ordering the Holder Ref. No. *(43), please order the part Ref. No. 43 (lever RUBK20ZA).

The replacement procedure is described on the next page.

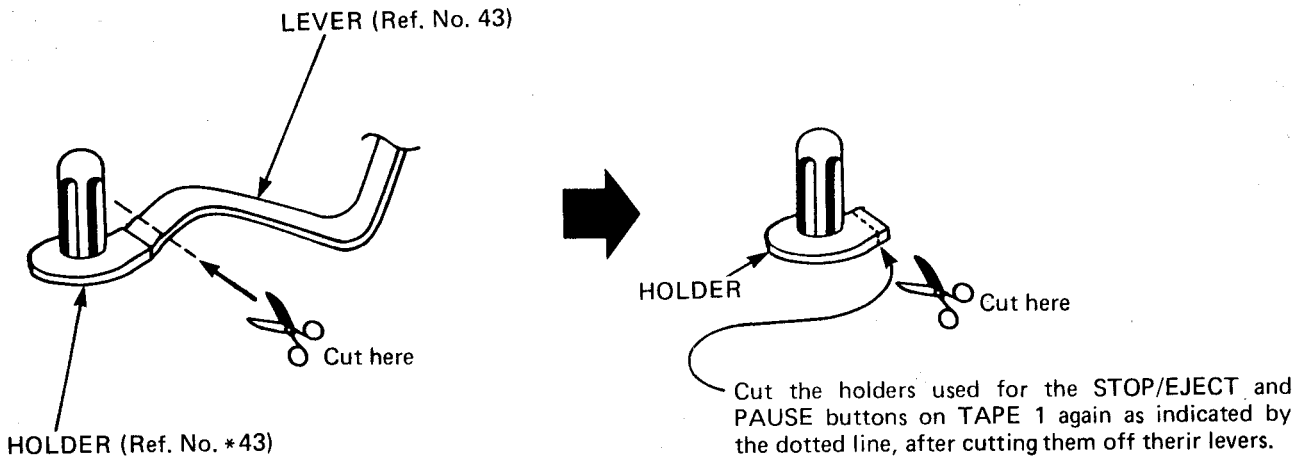
In this supplement, the part with Ref. NO. *(43) will be called "holder".

Panasonic

Matsushita Electric Industrial Co., Ltd.
Central P.O. Box 288, Osaka 530-91, Japan

■REPLACING THE HOLDER

Step-1 Using cutting pliers or a similer tool, cut the holder off the lever arm at the position indicated.


LEVER (Ref. No. 43)
Cut here
HOLDER (Ref. No. *43)
HOLDER
Cut here
Cut the holders used for the STOP/EJECT and PAUSE buttons on TAPE 1 again as indicated by the dotted line, after cutting them off therir levers.

Step-2 Insert the coil spring over the button shaft, then insert and press the holder with its cut side facing left as viewed from the lever's cushion side.

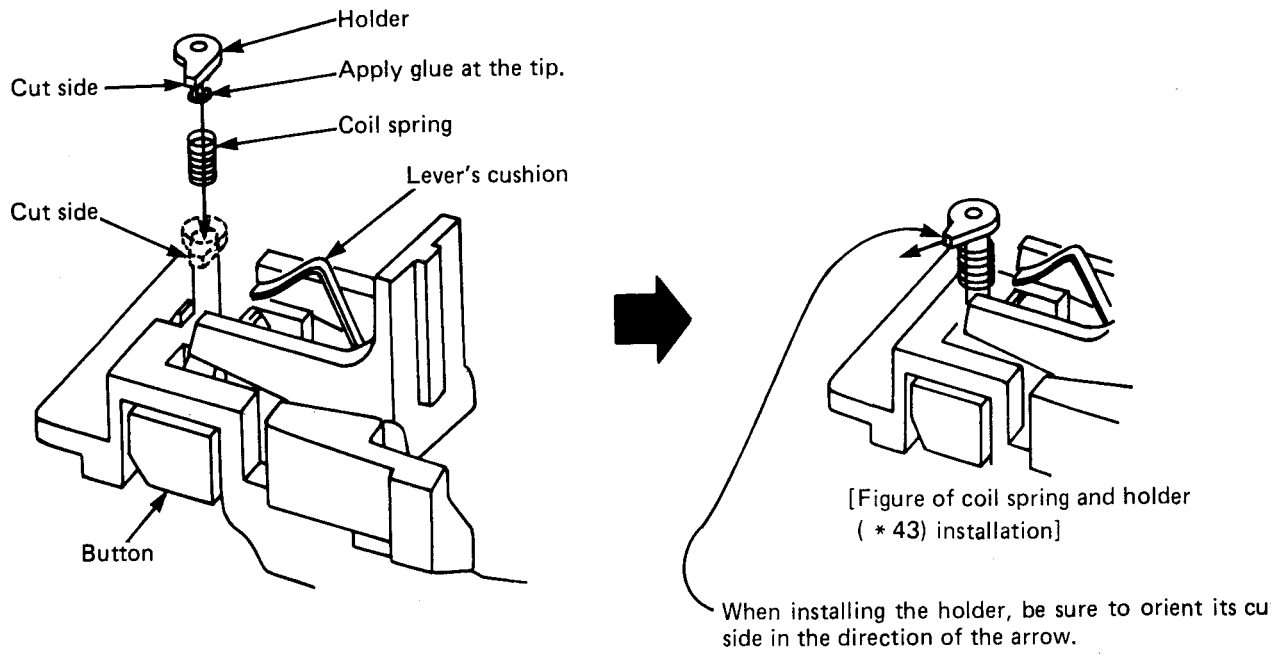

Holder
Apply glue at the tip.
Cut side
Coil spring
Lever's cushion
Cut side
Button
[Figure of coil spring and holder (* 43) installation]
When installing the holder, be sure to orient its cut side in the direction of the arrow.

Figure of coil spring and holder [*(43)] installation
When replacing the lever, cut the holder off the replacement lever before installing it. (Refer to Step 1.)

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